EFFECTIVENESS OF GRATED CUCUMBER UPON ACNE IN ADOLESCENT GIRLS

By

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A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R.MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

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DECLARATION

I hereby declare that the present dissertation entitled "**Effectiveness of grated cucumber upon acne**" is the outcome of the original research work undertaken and carried out by me under the guidance of **Dr. Latha Venkatesan M.Sc (N)., M.Phil., Ph.D.,** Principal, Apollo College of Nursing, **Mrs. Cecilia Mary, M.Sc (N).,**Lecturer, Department of Child Health Nursing, Apollo College of Nursing, Chennai. I also declare that the material of this has not found in anyway, the basis for the award of any degree or diploma in this university or any other universities.

M.Sc., (N) II Year

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SYNOPSIS

A Quasi Experimental Study to Assess the Effectiveness of Grated Cucumber upon Acne in Adolescent Girls at Selected Colleges, Chennai.

The objectives of the Study were

1. To assess the severity of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

2. To find out the effectiveness of grated cucumber upon the severity of acne in experimental group of adolescent girls.

3. To determine the level of satisfaction regarding the application of grated cucumber in experimental group of adolescent girls.

4. To find out the association between selected demographic variables and severity of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

The conceptual framework of the study was developed based on Ernestine Weidenbach's Helping Art of Clinical Nursing theory (1964), which was modified for the present study. An extensive review of literature and guidance by experts formed the foundation to the development of Demographic variables proforma, rating scale to assess the risk factors of acne, Global acne grading scale, and rating scale on level of satisfaction of adolescent girls. Hypotheses were formulated.

A Quasi experimental design was used in this study. The present study was conducted in selected nursing colleges in Chennai. The sample size was 60 adolescent girls, 30 in control and 30 in experimental group, who satisfied the

inclusion criteria using purposive sampling method. The investigator identified 30 samples using global acne grading scale. The samples selected were assessed for the risk factors of acne using rating scale to assess the risk factors of acne. The selected samples were in mild to severe risk of acne. The investigator then administered the demographic variable proforma to obtain the details of the participants and assessed the pre test severity of acne of the participants. There after the adolescent girls were applied with grated cucumber on a daily basis in the evening for duration of 15-20mintuts for thirty days. At the end of thirty days a post test was carried out in control and experimental group to find out the effectiveness of application of grated cucumber. The satisfaction level of the participants about the natural remedy for acne in experimental group was also assessed.

Major findings of the study were

- Majority (83.3%) of the adolescent girls were in the age group 18-19yrs, with family income between Rs.15,001- 20,000 (63.3%) attained menarche during 14-15 years (56.7%) in control group and 60% of adolescent girls attained menarche during 12-13 years in experimental group.

- Most of them had family history of acne (73.3%, 70%), with duration of acne for more than one year (43.4%, 66.6%).

- Majority (76.6%) of the adolescent girls of control group and experimental group were at moderate risk for acne.

- Most of the adolescent girls (56.7%) in control group had moderate level of acne and (20% and 23.3%) had mild and severe level of acne during pre-test. The post-test score showed that most of them

(56.6%) remained unchanged from moderate level of acne and (16.7% and 26.7%) had mild and severe level of acne. In experimental group, a significant percentage of them (50%) had moderate level of acne and 13.3% and 36.7% had mild and severe level of acne respectively. During post-test 57.6% had mild level of acne and 43.3% had moderate level of acne.

- The computed data revealed that the difference in mean and standard deviation of pre test (M=25.5, 27.5, SD=5.0, 6.5) between control and experimental group is not statistically significant ($p < 0.05$). Whereas the difference in the mean and standard deviation (M=26.4, 18.2, SD=6.2, 3.9) of post test is statistically significant ($p < 0.001$). Thus there is significant difference between the pre test and post test values of severity of acne in experimental group. Hence null hypothesis Ho_1 was rejected.

- Majority of them (80%) were highly satisfied and a significant percentage of them were moderately satisfied (20%).

- There was no association between selected demographic variables and severity of acne in adolescent girls. Hence null hypothesis Ho_2 was rejected.

Recommendations

- A similar study can be conducted on larger sample size to generalize the findings.
- An experimental study can be conducted using a combination of natural remedies for acne among adolescent girls.
- A descriptive study can be conducted to assess the self esteem and coping skills of adolescent girls with acne vulgaris.
- A longitudinal study can be done to identify the effectiveness of natural remedies upon various skin problems.

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CHAPTER I

INTRODUCTION

Background of the Study

"An adolescent is a harbor of dreams, the renewing promise of hope"

-Hudson George

The passing from childhood to adolescence and from adolescence to adulthood have both been considered developmental transitions. Individuals tend to become more vulnerable during periods of biological, social, and psychological transition. Adolescence is characterized by marked physiological changes, development of sexual feelings, efforts towards the construction of identity, and a progression from concrete to abstract thought.

Adolescence is viewed as a transitional state hence a very critical period in one's life. A healthy adolescence is very essential for a healthy adulthood. The adolescent is confronted with many different changes and is able to adapt to these changes in a constructive fashion, and in a way that result in developmental advance. Global adolescence population comes up to 1.2 billion, or nearly a fifth of the total world population, out of which India has the largest population of adolescents in the world around 243 million as stated by WHO in the year 2010. Teenage years are often referred to as the formative years of one's life where important values, principles, religious belief and responsibilities are inculcated.

Acne vulgaris is a common disease with prevalence up to 80 % during adolescence. Study methodologies, including case-control and cross-sectional surveys, have demonstrated psychological abnormalities including depression, suicidal ideation, anxiety, psychosomatic symptoms, including pain and discomfort,

embarrassment and social inhibition. Effective treatment of acne was accompanied by improvement in self-esteem, affect, obsessive-compulsiveness, shame, embarrassment, body image, social assertiveness and self-confidence. Although some consider acne to be merely a cosmetic problem, it may have significant and enduring emotional and psychological effects. Acne can negatively impact mood, self-esteem, and interpersonal relationships and may lead to depression and suicidal ideation. Several studies have attempted to qualitatively and quantitatively assess the psychological effects of acne in teenagers.

Although acne is most prevalent in adolescent age group, since acne vulgarism occurs mostly on face, the impairment of self image and self esteem, clinical depression, social phobia and anxiety factors have been associated with it. Acne is more prevalent in males than in females. Acne affects emotional health in both genders. The psychological morbidity is complex among adolescent. The cause of acne is multifunctional, Predisposing factors include heredity, hormonal contraceptives, androgen stimulates, certain drugs, including corticosteroids, other possible factors are exposure to heavy oils, greases, rubbing from light clothing, cosmetics, emotional stress, and unfavorable climate.

The prevalence of acne in adolescents has been reported as being between 35% and 90% depending on the method of classification, with peak incidence occurring at between 14-17 years in females and 16 -18 years in males. Prevention and appropriate management of acne is very important during adolescent period. Improvement of the adolescent's overall health status is part of the general management. Adequate rest, moderate exercise, a well balanced diet, reduction of emotional stress, is part of general health promotion. Gentle cleansing with a mild cleanser once or twice daily is usually sufficient. Antibacterial soaps, topical agents

are used to dry the acne. Acne on the forehead may improve with brushing the hair away from the forehead.

Some forms of light therapy were also used for short term benefit which may be easier to comply, despite the initial discomfort, because of their short duration. Systemic antibiotic therapy is used when moderate to severe acne does not respond to topical treatments. Oral antibiotics are considered safe to use to treat acne. The physical changes of puberty are primarily the result of hormonal activity under the influence of the central nervous system. The hormonal influences during puberty cause accelerating in growth and maturation of the skin and its appendages. Sebaceous glands become extremely active at this time causing acne.

Adolescents are continually comparing themselves with their peers and make judgments about their own normality. Pubertal children feel most comfortable when they eat junk foods like their friends and age mates; unfortunately this is also the time when the hormonal effect of the sebaceous glands produce acne, which creates problems for many youngsters. To the adolescent children, even the most insignificant pimple may be viewed as a gross disfigurement. Acne is most commonly occurs during adolescence and often continues into adulthood, acne is usually caused by an increase in male sex hormones, which people of both genders accrue during puberty.

Need for the Study

Adolescence is a critical stage in the life of a human. Hence he or she may have to undergo lot of stress and problems which affect the ability of the adolescents to function well. During this stage numerous problems related to health, educational, and societal occur. Few common problems of adolescence are development of acne,

eating disorders, addiction to drugs, phobias etc. There are a lot of commercial products for teenage acne treatment and many of them can be effective. The problem is that by using a product that is not right for skin or for age can get worse and leave scars for the rest of life. So, a good idea would be to make our own anti-acne remedy at home with nothing but natural ingredients, that way we can be certain that we are not exposing the skin to any danger. Making a home-made remedy for acne is not only safe but also economic.

Healthy and radiant skin requires proper nutrition. However, according to a 2007 report by the Center for Disease Control and Prevention, 39.5 percent of Americans eat less than the recommended three to five servings of fruits and vegetables each day. Deficiencies in vitamins and minerals can affect the body's ability to function optimally. Vitamins and minerals can be taken to supplement our diet when our nutritional needs are lacking through food consumption alone.

Acne really does not appear within a day, in fact, according to experts, it takes about 3 weeks for full blown acne to occur. For those who are experiencing an outbreak of acne, how to get rid them is understandably foremost in their minds rather than on the underlying problem. While there are some remedies, the best one-two punch for acne is to treat the causes as well as the symptoms. A multiplicity of factors can be blamed for acne, most of which are not related to dirty skin, eating too much chocolate or munching on greasy chips. Vigorous washing and constant cleaning of acne areas of the skin can actually cause more blemishes for people who are attempting to get rid of acne overnight. The use of soaps, cleansers, and scrubbing cloths can irritate and redden an area.

In fact, in order to actually get rid of the oil that most people associate with facial skin problems, a person would literally have to wash their face about every minute or so of the day. For those who do wash the skin frequently, a worsening of the oil production may occur as the body attempts to compensate for the unnatural dryness in the area. As mentioned earlier, foods are also blamed for causation of acne. Chocolate and greasy foods are often blamed, but there is little evidence that foods have much effect on acne in most people. Hormone changes, such as those during the teenage years and pregnancy, probably play a role. There are many myths about what causes acne. Another common myth is that dirty skin causes acne; however, blackheads and pimples are not caused by dirt. Stress doesn't cause acne, but stress can make it worse.

The exact cause of acne is not known, but factors that contribute to this condition include heredity, oily skin and androgens. Additional factors include allergies, stress, the use of certain drugs, nutritional deficiencies, liver dysfunction, exposure to industrial pollutants, cosmetics and the monthly menstrual cycle. In addition, the skin functions to eliminate a portion of the body's toxic waste by sweating. If the body contains more toxins than the kidneys or liver can effectively discharge, the skin takes over. In fact, some doctors call the skin the third kidney. As toxins escape through the skin, they can disrupt the health and integrity of the skin, creating acne.

Cucumber is a rich source of vitamin C. One medium sized cucumber contains Calories 13, Vitamin C 5.5 mcg, Molybdenum 5.6 mcg, Vitamin A 223.60 UI, Foliate 13.52mcg, Magnesium 11.44mg, and Fiber 0.83g. Because cucumbers, like watermelons, are 95% water, they keep the body hydrated and help regulate the body’s inner temperature. They also help the body flush out toxins. The skin contains a good amount of vitamin C, about 10% of the daily recommended

allowance. As cucumber and the skin share the same level of hydrogen, it becomes easier for cucumber to mask all the problem areas. It helps in soothing and softening the skin which can get us relaxed in no time.

Cucumber is effective in treating a number of skin ailments. However it should be used on a regular basis for quick and long-lasting results. Topical application of cucumber paste on affected area is a safe herbal remedy suggested in treating acne. It nourishes skin surface and provides a glowing skin devoid of pimples. Cucumber extract is well known for its anti-inflammatory and anti-oxidant properties. It scavenges free radicals and delays aging impact on skin surface. As per studies, cucumber extract is found to be as rich source of cucurbitacins, vitamin C, manganese and beta-carotene. Regular use of cucumber extract prevents skin irritation and reduces the risk of swellings and inflammations. At present, cucumber paste is one among the most recommended skin toners by health practitioners. Application of cucumber extract hydrates skin surface and prevents various skin problems. As cucumber extract is less expensive than any other remedy and is readily available in the market, the investigator is interested to use grated cucumber for acne among adolescent girls.

Statement of the Problem

A Quasi-Experimental Study to Assess the Effectiveness of Grated Cucumber upon Acne in Adolescent Girls at Selected Colleges, Chennai.

Objectives of the Study

1. To assess the severity of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

2. To find out the effectiveness of grated cucumber upon the severity of acne in experimental group of adolescent girls.
3. To determine the level of satisfaction regarding the application of grated cucumber in experimental group of adolescent girls.
4. To find out the association between selected demographic variables and degree of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

Operational Definitions

Effectiveness

In this study, effectiveness refers to the outcome with regard to the change in the severity of acne after application of grated cucumber and is measured by Global acne grading tool.

Grated cucumber

In this study, grated cucumber refers to the application of finely grated cucumber over face and neck for 15-20mts in the evening after face wash with water regularly for 30 days.

Acne

In this study, acne refers to localized skin inflammation as a result of over activity of the oil glands at the base of hair follicles and is measured by Global acne grading tool

Adolescent girls

In this study, an adolescent girl refers to females in the age group of 16 to 21yrs.

Assumptions

The study assumed that

- Acne is more common during adolescence
- Acne cause stress among adolescence
- Vitamin C is essential for skin
- Cucumber is rich source of vitamin C

Null Hypotheses

Ho_1: There will be no significant difference in the severity of acne before and after the application of grated cucumber in control and experimental group of adolescent girls.

Ho_2: There will be no significant relationship between selected demographic variable and the severity of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

Delimitation

The study was delimited to

- The adolescent girls of Apollo College of nursing and Billroth College of Nursing
- A duration of 4 weeks
- Adolescent girls between the age group of 16-21yrs.

Projected Outcome

This study will be useful to reduce acne among adolescent girls. In turn it will enhance the body image of them which will finally help in improving the self esteem of the adolescent girls.

Conceptual Framework

The conceptual framework for a particular study is the abstract, logical structure that enables the researcher to link the findings to nursing body of knowledge. Conceptual framework formalizes the thinking process, so that others may read and know the framework of reference, basic to research problem. The framework is built from a set of concept linked to a plan or existing system of methods, behaviors, functions and objectives.

It is developed from an existing theory of interest and proposing relationship among them. The model gives direction for planning research design, data collection and interpretation of findings. (Polit and Beck 2010)

The present study aims to assess the effectiveness of grated cucumber upon acne in adolescent girls. The framework of the study is based on 'Weidenbach's Helping Art of Clinical nursing theory'.

Ernestine Weidenbach's Helping Art of Clinical Nursing theory (1964) describes a defined situation and a way to attain it.

This theory has three factors

1. Central purpose
2. Prescription
3. Realities

Central Purpose

It refers to what the investigator wants to accomplish. It is the overall goal towards which the investigator strives. In this study, it refers to the management of acne in adolescent girls.

Prescription

It refers to the plan of care for the participants of study. It will specify the nature of action that will fulfill the investigator's central purpose. In this study it refers to the intervention planned by the investigator who will apply grated cucumber to adolescent girls who will fulfill the sampling criteria.

Realities

It refers to the physical, physiological, emotional and spiritual factors that come into play in a situation involving investigator action. The five realities identified by Weidenbach's are agent, recipient, goal, means, activities and the framework

In this study it refers to the following

- Agent : Investigator
- Recipient : Adolescent girls who are in between the age of 16 – 21yrs and have acne
- Goal : To check the effectiveness of grated cucumber upon acne in adolescent girls
- Means : Selected interventions on selected samples, i.e. application of grated cucumber on face and neck for 15-20 minutes for a period of 30 days in adolescent girls.
- Framework : Is done in Apollo College of nursing

The conceptualization of nursing practice according to this theory consist of three steps

Step I – Identifying the need for help

Step II- Ministering the needed help

Step III – Validating that the need for help was met

Step I: Identifying the need for help

This step involves determining the need for help. The severity of acne among adolescent girls was assessed using global acne grading scale. Purposive random sampling technique was used to select the participants for the experimental study. The risk factors of acne were assessed using rating scale to assess the risk factors of acne among the selected adolescent girls.

Step II: Ministering the needed help

After the assessment of the severity of acne, the selected participants were applied the grated cucumber over the face and neck daily in the evening for 15-20 minutes for a period of 30 days. After the completion of 30 days, the post test was carried out to assess the severity of acne using global acne grading scale. The level of satisfaction of adolescent girls regarding the application if grated cucumber was obtained.

Step III: Validating that the need for help was met

It is accomplished by means of assessing the severity of acne after the application of grated cucumber. It is followed by analysis of the findings.

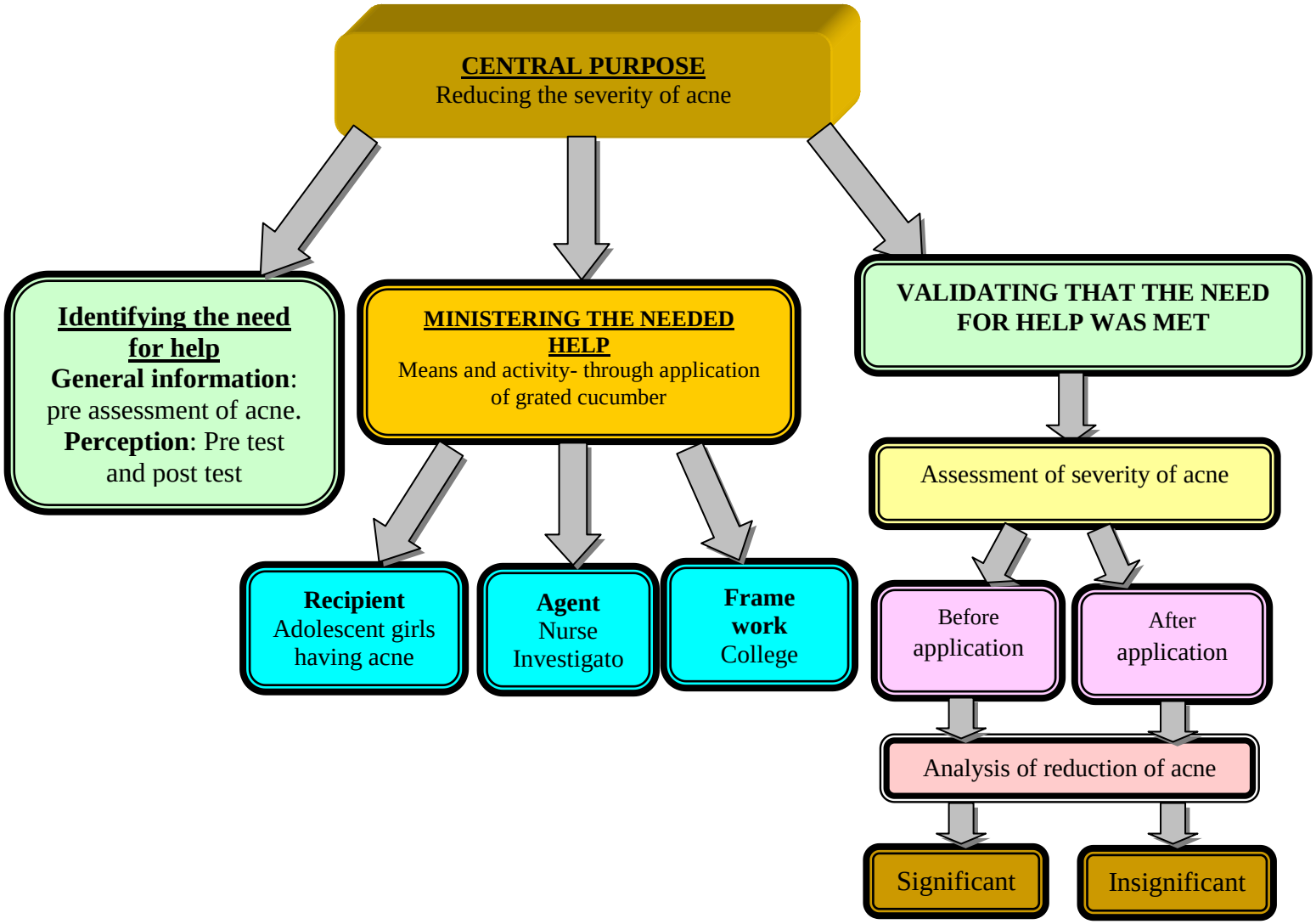

Fig.1 Conceptual Framework Based on Wiedenbach's Helping Art of Clinical Nursing Theory

Summary

This chapter has dealt with the background, need for the study, and statement of the problem, objectives, operational definitions, research hypothesis, assumptions, delimitations and conceptual framework.

Organization of the Report

Further aspects of the study are presented in the following five chapters.

In Chapter – II : Review of literature

In Chapter – III : Research methodology includes research approach, research design, setting, population, sample and sampling techniques, tool description, content validity and reliability of tools, pilot study, data collection procedure and plan for data analysis.

In Chapter – IV : Analysis and interpretation of data

In Chapter – V : Discussion

In Chapter – VI : Summary, conclusion, implications and recommendations.

CHAPTER II

REVIEW OF LITERATURE

A literature review is an organized written presentation of what has been published on a topic by scholars (Burns and Grove, 2009). The task of reviewing literature involves the identification, selection, critical analysis and reporting of existing information on the topics of interest. A review acquaints the researcher with what has been done in the field and it minimizes possibilities of unintentional duplication. It justifies the need for replication provides the basis of future investigation and help to relate the findings of one study to another.

This chapter deals with a review of published and unpublished research studies and from related material for the present study. The review helped the researcher to develop an insight into the problem. This helped the investigator in building the foundation of the study.

The review of literature in this chapter has been presented under the following headings

- **Literature related to prevalence of acne among adolescent age group**
- **Literature related to psychological stress, low self esteem and acne**
- **Literature related to alternative therapies for acne**
- **Literature related effectiveness of cucumber upon skin problems**

Literature related to prevalence of acne among adolescent age group

Burton conducted a cohort study during the year 2009 among 1555 school children aged 8-18 and graded the presence and severity of acne lesions. The study concluded that the incidence of acne vulgaris is more than 60% among young adults.

In Auckland Lello in 2006 conducted a study on prevalence and severity of acne vulgaris among senior high school students. The study was conducted among 867 student having acne vulgaris. The finding says that among the children aged above 18 years 91% reported having acne vulgaris.

A prevalence study was conducted by Christin et al to assess the prevalence of acne among individuals aged 20-29 years, 30-39 years, 40-49 years, 50 years and above. Of the 1013 participants aged 20 years and older, 73.3% (n = 744) reported ever having acne. After the teenaged years, women were more likely to report having acne than men, with the difference being statistically significant in all age groups. The prevalence of acne reported in women versus men was as follows: 20 to 29 years, 50.9% (n = 276) versus 42.5% (n = 201) ($P = .0073$); 30 to 39 years, 35.2% (n = 152) versus 20.1% (n = 73) ($P < .0001$); 40 to 49 years, 26.3% (n = 93) versus 12.0% (n = 36) ($P < .0001$); and 50 years and older, 15.3% (n = 41) versus 7.3% (n = 18) ($P = .0046$). The results were based on the participant's own perception of the presence or absence of acne rather than a clinical evaluation. The researcher concluded that acne continues to be a common skin problem past the teenaged years, with women being affected at higher rates than men in all age groups 20 years or older.

A large-scale community-based study was performed in six cities in China during the year 2008 by Wang to determine the prevalence and possible risk

factors for acne in the Chinese population. A total of 17,345 inhabitants were included in this study. Of these, 1,399 were found to have acne. No acne was found in subjects less than 10 years of age, and only 1.6% in the 10-year-old group had acne. Prevalence then increased rapidly with age, up to 46.8% in the 19-year-old group. After that, it declined gradually with age. Acne was rare in people over 50 years of age. In subjects in their late teens and 20s, acne was more prevalent in males, while in those over 30 years of age it was more prevalent in females. In subjects with acne, 68.4% had mild; 26.0% had moderate and 5.6% had severe acne. In adult acne, persistent acne was much more common (83.3%) than late-onset acne (16.7%). Smoking and drinking were found to be associated with adolescent acne, while no association was found between diet and acne.

Literature related to psychological stress, low self esteem and acne

Roger et.al (2000) conducted a study to examine the associations between acne and depressive symptoms, anxiety and suicidal behaviors. This was a secondary analysis of a cross-sectional survey named 'Youth2000' (New Zealand national survey of youth health). A total of 9567 secondary school students aged 12-18 years participated in the survey. The main outcome measures were self-reported acne, depressive symptoms (Reynolds Adolescent Depression Scale > 77), anxiety (Anxiety Disorder Index from Multidimensional Anxiety Scale for Children) and self-reported suicide attempts. 'Problem acne' was associated with an increased probability of depressive symptoms, odds ratio 2.04 (95% confidence interval 1.70-2.45); anxiety, odds ratio 2.3 (1.74-3.00); and suicide attempts, odds ratio 1.83 (1.51-2.22) in a logistic model that included age, gender, ethnicity, school decile and socio-economic status. The association of acne with suicide attempts remained after controlling for depressive symptoms and anxiety, odds ratio 1.50 (1.21-1.86). The study concluded that young people presenting with acne are at increased risk of

depression, anxiety and suicide attempts. Attention should be paid to their mental health, and the importance of asking directly regarding suicide is emphasized.

Five hundred thirteen students, 13-16 years of age, were recruited in a cross-sectional survey from a middle school located in Seodaemun-gu, City of Seoul in May 2007.Among 513 students, 504 students, 13-16 years of age, including 253 boys (50.2%) and 251 girls (49.8%), completed the psychosocial index questionnaires and clinical examination. From the objective analysis (KAGS), 78.9% of the students had acne (220 boys (55.3%) and 178 girls (44.7%)), and 10.2% of students had severe acne beyond grade 4. Boys were more likely to have severe acne than girls (grade 2.07 vs. 2.04, $p < 0.05$). The mean age of onset was 13.9 years (mean age of boys, 14.2 years; mean age of girls, 13.7 years), and 7.6% reported having a history of medical treatment. On the self-perceived subjective acne severity rating, 60 students (12.2%; 26 boys and 34 girls) reported having 'problem acne' (high-score status).

Uslu et al performed a cross-sectional analysis of 600 high school students who completed the General Health Questionnaire (GHQ) and Rosenberg Self-Esteem Scale (RSES). All participants were examined by a dermatologist who provided an objective assessment of acne severity. A total of 550 out of 600 students completed both the questionnaire and physical examination. The study population consisted of 303 girls and 260 boys, aged 13-19, with a mean age of 15.24. Acne was self-reported in 83.4 percent of subjects, with 40.4 percent of subjects rating their acne as mild, 36 percent moderate, and 6.5 percent severe. Self-report of acne and the dermatologist's objective assessments were positively correlated. The prevalence of acne was 63.6 percent, with 29.2 percent non-inflammatory and 34.4 percent inflammatory acne. Acne was more prevalent and severe in boys than in

girls. There was a direct correlation between subjective, but not objective, severity of acne and symptoms of anxiety, depression, and lower self-esteem based on responses to the GHQ and RSES.

Hassan et al selected 132 patients from an acne specialist clinic and compared their responses to questionnaires including the Derriford Appearance Scale (DAS) and self-rated acne severity scales for face, chest, and back. Women had significantly greater DAS scores than men in the areas of general self-consciousness of appearance with mean score 51.3 vs. 39.7, $p< 0.00$, social self-consciousness with mean score 39.0 vs. 29.3, $p = 0.00$, sexual and bodily self-consciousness with a mean score 18.0 vs. 14.0, $p = 0.0$, facial self-consciousness with a mean score 7.4 vs. 3.9, $p < 0.00$, and negative self-concept with mean score 16.4 vs. 13.9, $p = 0.004$. Facial acne severity rating was significantly associated with social self-consciousness in women ($p = 0.038$) but not in men. In both men and women, back acne was associated with sexual and bodily self-consciousness of appearance ($p = 0.006$ and $p = 0.002$, respectively). The authors noted a trend for DAS scores to vary with ethnicity. Non-white men scored higher in the areas of self-consciousness of sexual and bodily appearance compared to white males and white women scored higher across all DAS subscales. However, these results did not achieve statistical significance.

Smithard et al surveyed 317 students using an age-appropriate Strengths and Difficulties Questionnaire (SDQ) and an Acne Management Questionnaire to assess psychological health, level of acne knowledge and help-seeking behavior. Acne severity was graded using an adapted form of the Leeds acne grading scale. The study comprised of 153 boys (48%) and 164 girls (52%), aged 14-16 years. Seventy-seven percent of participants scored within the normal range of the SDQ, with 52 children (16%) classified as “borderline abnormal” and 22 (7%) as

"probably abnormal." Approximately half had acne (53% boys and 45% girls), with 11 percent of participants having moderate to severe acne. Female students and those who had definite acne, defined as more than 12 lesions, had significantly higher levels of emotional and behavioral difficulties based on SDQ score ($p< 0.05$ and $p< 0.01$, respectively). Participants with acne were nearly twice as likely as those without acne to score in the abnormal/borderline range of the SDQ (32% vs. 20%; odds ratio 1.86, 95% CI 1.03-3.34). Although the response rate was adequate, 20 percent of pupils refused to take part in or were absent during the study. The authors suggest that this could represent more vulnerable teenagers or those most embarrassed by their skin and this study would then underestimate the psychological effects of acne.

Literature related to alternative therapies for acne

In a study conducted in 2003, scientists discovered that Dong Quai (a Chinese herb also known as Angelica dahuricaor Angelica sinensis) had anti-acne benefits similar to that of erythromycin (an antibiotic often used as an acne medication). The same study showed that licorice also had significant acne-fighting effects.

In the year 1994, a study reveals that Guggul a herb commonly used in ayurveda the traditional medicine of India may help relieve acne, especially among people with oily faces. The study included 20 people with cystic acne, and found that taking guggul supplements daily for three months led to a progressive reduction in acne lesions.

Dr. Lit-Hung Leung, a Hong Kong physician in 2005 conducted a study on pantothenic acid in the treatment of acne vulgaris among the adolescents aged

12-18 years. The study included 100 Chinese patients who were given a 20% topical cream of pantothenic acid to treat acne. The study suggests that there is a substantial evidence to support the use of pantothenic acid (10 grams in adolescent) in preventing Acne vulgaris episodes or decreasing their severity in young adolescent.

Kathleen et al during the year 2010 conducted a pilot study to find out the potential advantages of using auriculoacupuncture or auriculotherapy to treat facial acne vulgaris for twenty weeks in teen agers and young adults. Male and female participants aged 13-25 years with grade I or II mild to moderate non scarring facial acne were randomized in control and experimental group. Criteria for inclusion in the study were grade I and II mild to moderate nonscarring facial acne vulgaris as determined by a dermatologist blinded to the study. Exclusion criteria were severe acne grades III and IV or any systemic acne therapy (antibiotics, isotretinoin) or retinoid topical treatments (tretinoin) for 1 month prior to the beginning of the study. For the purpose of this study, an acne grading system using photographic standards was used in which overall acne was evaluated on a 0 to 8 scale anchored to photographic standards that illustrate grades 0, 2, 6, and 8. Experience with use of this system in large-scale clinical trials has shown to be useful and reliable. Both groups received 20-minute treatments in 20 weekly sessions. Results and conclusions of the analyses were obtained using SAS with level of significance at 5%. It was concluded that there was positive improvement of facial acne vulgaris by auriculoacupuncture and auriculotherapy. The results of this pilot study appear promising, suggesting that further study of this alternate treatment for acne is warranted.

Iraji et al conducted a randomized, double-blind placebo-controlled study in Iran during the year 2003 to assess the efficacy of 5% topical tea tree oil gel in mild to moderate acne vulgaris. This was a randomized double-blind clinical trial

performed in 60 patients with mild to moderate acne vulgaris. They were randomly divided into two groups and were treated with tea tree oil gel (n=30) or placebo (n=30). They were followed every 15 days for a period of 45 days. Response to treatment was evaluated by the total acne lesions counting (TLC) and acne severity index (ASI). The data was analyzed statistically using t-test and by SPSS program. There were no significant differences regarding demographic characteristics between the two groups. There was a significant difference between tea tree oil gel and placebo in the improvement of the TLC and also regarding improvement of the ASI. In terms of TLC and ASI, tea tree oil gel was 3.55 times and 5.75 times more effective than placebo respectively. Side-effects with both groups were relatively similar and tolerable. It was concluded that topical 5% tea tree oil is an effective treatment for mild to moderate acne vulgaris.

Literatures related to effectiveness of cucumber upon skin problems

Woolery Lloyd in 2010 explored the effects of topical vitamin C as a treatment for acne vulgaris. The double-blind study included 50 participants who used a topical vitamin C treatment for 12 weeks. The study concluded that the treatment demonstrated a significant improvement. The researchers theorized that vitamin C may act to prevent the oxidation of sebum, which produces and aggravates acne.

In Jadavpur University, India researchers report that juice from the cucumber contains high levels of ascorbic acid, or vitamin C, which stops the action of elastase, a protein which breaks down elastin fibers in the skin. The results of their study, published in December 14, 2010 issue of "Archives of Dermatological Research," state that cucumber juice should be considered as an anti-wrinkle agent

for the cosmetic industry. The application of paste of cucumber on skin affected by acne will reduce the severity and occurrence of pimples.

A research paper published in the "African Journal of Pharmacy and Pharmacology" in 2010 tested the efficacy of six formulas for acne creams. The researchers found that the inclusion of cucumber extract increased the anti-acne action of the treatment while reducing the side effects. The study did not test the use of cucumber by itself and more research is necessary to be sure of its individual usefulness.

Phyllis in British Nutrition Foundation explained that Cucumber's scientific name is Cucumis Sativas and comes in no less than fifty different varieties belonging to the gourd family. It has over eighty nutrients which include Vitamins A, B1, B2, B3, B6 and C plus the minerals silica and molybdenum. It is also rich in potassium, manganese, folate, dietary fibre, magnesium, calcium and zinc. It is very low in calories with only 13 calories per gram; therefore it is perfect as part of a calorie controlled diet. The flesh is primarily composed of water, 90% to be precise and apart from being naturally hydrating and containing ascorbic acid and caffeic acid both of which are recognized as having the ability to sooth sensitive and irritated skin. It is able to reduce swelling, puffy eyes and sooth burns and dermatitis. Cucumber skin is rich in silica which is essential for healing connective tissue such as muscles, tendons, bone, cartilage and ligaments. Because of its high potassium content, cucumber is also effective in the control of high blood pressure.

As stated in a journal named Indian journal of nutrition and dietetics cucumber is a great source of ascorbic acid and caffeic acid, which helps console skin irritations and reduces inflammation. Cucumber is excellent for making skin soft and fair. Cucumber juice is a good source of silica which is an essential element

to improve the complexion and health of the skin. With so many useful ingredients in cucumber it can help you in treating so many skin problems. Due to its cooling effect it can be termed as a magic wand for all the skin problems. The cleansing property helps the skin tremendously making it soft and supple.

Summary

This chapter has dealt with the review of literature related to the problem stated. The literatures stated here were extracted from 11 primary sources and 9 secondary sources. It has helped the researcher to understand the impact of the problem under study. It has enabled the investigator to design the study, develop the tool, plan the data collection procedure, and to analyze the data.

CHAPTER III

RESEARCH METHODOLOGY

The methodology of the research study is defined as the way, the data are gathered and analyzed in order to answer the research questions or analyze the research problem. The research methodology involves a systematic procedure by which the researcher starts from initial identification of the problem to find its final conclusion (Polit and Beck, 2008). The present study was conducted to assess the effectiveness of grated cucumber upon acne in adolescent girls at selected college, Chennai.

This chapter deals with a brief description of different steps undertaken by investigator for the study. It includes research approach, research design, the setting, population, the sample and sampling technique, development and description of tool, content validity, reliability, pilot study, protection of human rights and procedure for data collection procedure and plan for data analysis.

Research Approach

Research approach is the most significant part of any research. According to Polit and Beck (2010), an Experimental research is an extremely applied form of research and involves finding out how well of a programme and practice of policy are working. Its goal is to assess or evaluate the success of the programme.

An experimental research is generally applied where the primary objective is to determine the extent to which a given procedure meets the desired results. In this study, the researcher assessed the effectiveness of grated cucumber upon acne in adolescent girls after implementing the same she found the effectiveness by using experimental research design.

Research Design

A research design incorporates the most important methodological design that researcher works in conducting a research study (Polit and Beck 2010).

The research design used in this study is quasi experimental design, two group pre test post test design with intervention. In this study, the investigator assessed the severity of acne using global acne grading scale in both control and experimental group of adolescent girls and manipulated the independent variable i.e. grated cucumber was applied on face and neck to the experimental group daily for thirty days. Then the post test severity of acne was assessed for both control and experimental group. There after the level of satisfaction was assessed using rating scale in experimental group of adolescent girls. The research design is diagrammatically represented as follows.

$$\mathbf{0_1 \_\ 0_2}$$

$$\mathbf{0_1\ X\ 0_2}$$

$\mathbf{0_1}$ – Pre-test severity of acne

X – Application of grated cucumber for experimental group.

$\mathbf{0_2}$ – Post-test severity of acne

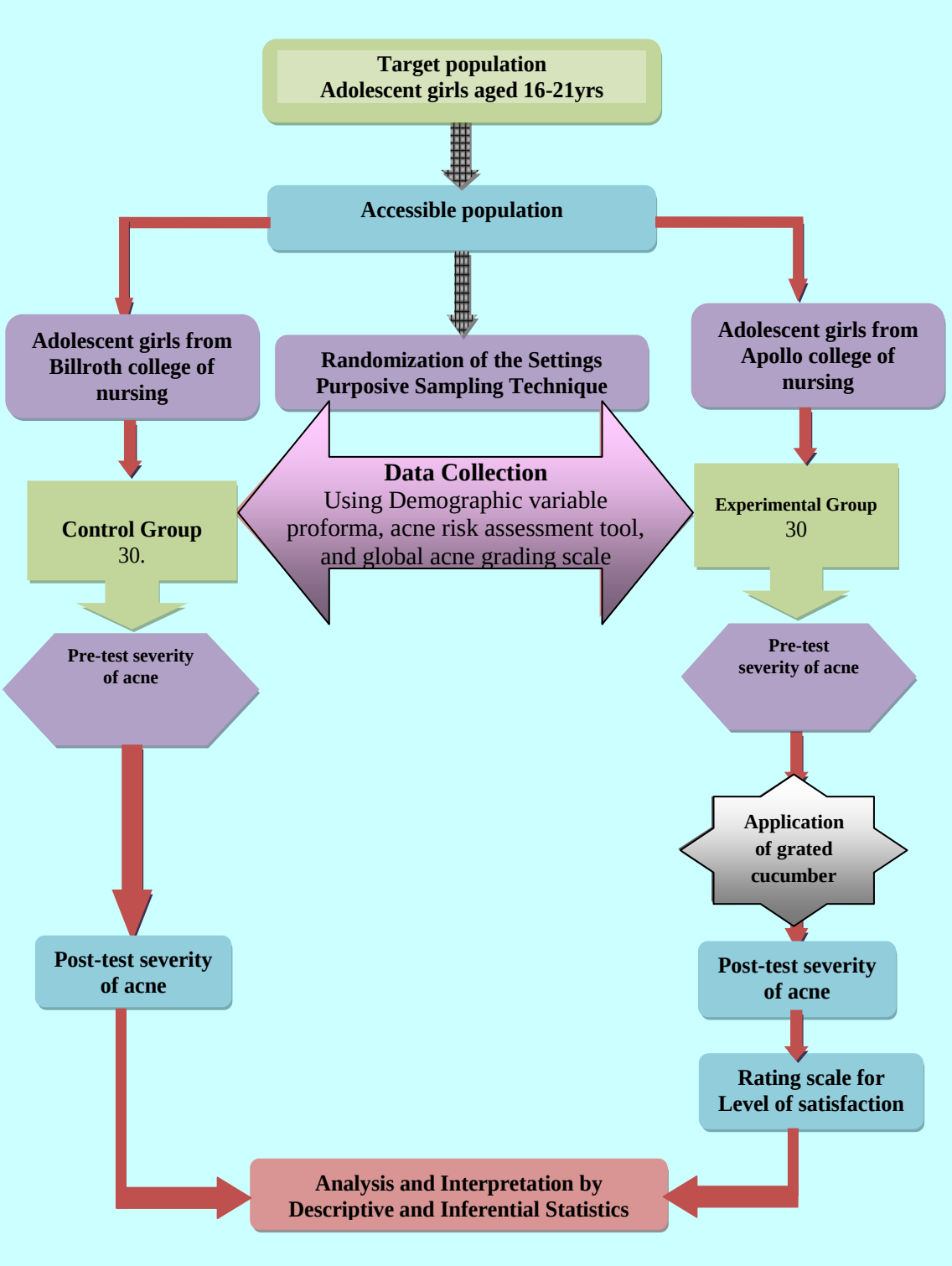

Fig. 2 Schematic Representation of Research Methodology

Variables

Variable is an attribute that varies, and takes on different values (Polit, 2010).

Independent variable

The variable that is believed to cause or influence the dependent variable is called independent variable. The independent variable of this study is grated cucumber.

Dependent variable

The variable hypothesized to depend on or be caused by independent variable is the dependent variable. The dependent variable in this study is acne.

Attribute variables

A variable that confounds the relationship between the independent and dependent variables that needs to be controlled in the research design through statistical procedures (Polit & Beck 2010). Demographic variables are is attribute variables in this study developed by the researcher.

Research Setting

According to Polit and Beck (2008) setting is the physical location and condition in which data collection takes place in a study. The study was conducted at Apollo College of nursing, Chennai (experimental group) and Billroth College of nursing, Chennai (control group). Billroth College of Nursing, Madhuravoyal, Chennai is located 14 kilometers away from Chennai Central railway station, 3

kilometers from the main bus station and 1 kilometer from Apollo college of Nursing. The strength of students is about 250 and staff strength about 25. The setting was chosen on feasibility in terms of availability of adequate subjects. Apollo College of Nursing is located 15 kilometers away from Chennai Central railway station. In B.Sc Nursing the strength of the students is about 378. The setting was chosen on feasibility in terms of availability of adequate subjects.

Population

Polit and Beck (2008) said that the population is the entire aggregation of cases which meet designated set of criteria's.

Target population is the group of population that the researcher aims to study and to whom the study findings will be generalized. In this study, the target population comprises of all the adolescent girls who satisfies the inclusion criteria.

Accessible population is the list of population that the researcher finds in the study area. The accessible populations in this study were adolescent girls who were studying in Billroth College of nursing and Apollo College of nursing.

Sample

Polit and Beck (2008) said that the sample consists of the subset of the units that comprises the population. A sample of 60 adolescent girls from Billroth College of nursing and 30 from Apollo College of nursing were selected as control and experimental group respectively.

Sampling Technique

Polit & Beck (2008) stated sampling is the process of selecting a portion of population to represent the entire population Randomization of the settings was

done. From the selected settings samples were selected using purposive sampling technique. Purposive sampling technique is a method in which the researcher selected participants based on personal judgment. Researcher identified the sample that meet the inclusion criteria and included them in the study after obtaining their consent.

Sampling Criteria

Inclusion criteria

The study will include

- Adolescent girls aged 16-21yrs.
- Adolescent girls who have acne at least for 6 months.
- Adolescent girls available at the time of data collection.
- Adolescent girls who can read and understand English.

Exclusion criteria

The study will exclude

- Adolescent girls not willing to participate in the study.
- Adolescent girls who are already on medical treatment for acne.
- Adolescent girls who are not in the specified age group.

Selection and Development of Study Instruments

As the study is aimed at evaluating the effectiveness of grated cucumber upon acne in adolescent girls, the data collection instruments were developed through an extensive review of literature in consultation with experts and with the

opinion of faculty members. The instruments used in this study were Demographic variables proforma, rating scale to assess the risk factors of acne, Global acne grading scale, rating scale on the level of satisfaction of application of grated cucumber.

Demographic variables proforma

Demographic variables proforma includes information regarding age in years, educational status, type of family, family income, age attained menarche, family history and duration of acne. The investigator collected data by self administering the questionnaire.

Rating scale to assess the risk of acne

This is a self developed rating scale to assess the risk of acne for the participants. This four point rating scale consists of 20 items ranging from always to never. The investigator collected data by self administering the questionnaire.

The scoring interpretation is as follows:

Scoring	**Interpretation**
61-80	High risk
41-60	Moderate risk
20-40	Low risk

Global acne grading scale

This is a standardized tool to assess the severity of acne. In this scale the face is divided into five regions and scoring is allotted for each region. The scoring interpretation is as follows:

Scoring	Interpretation
1-18	Mild
19-30	Moderate
31-38	Severe
>39	Very severe

Rating scale on level of satisfaction regarding effectiveness of application of grated cucumber upon acne

This is developed by the investigator based on the objectives of the study. Rating scale consists of 10 items regarding application of cucumber. Responses extend from highly satisfied (4), moderately satisfied (3), just satisfied (2) and unsatisfied (1).

The obtained score is converted into percentage and interpreted as follows:

Scoring	Interpretation
>75%	Highly satisfied
51-75%	Moderately satisfied
25-51%	Just satisfied
<25%	Dissatisfied

Psychometric Properties of Instruments

Validity of the study instruments

Content validity is the degree to which an instrument measures what it is supposed to measure. Content validity of a tool is measured by getting opinion from 6 nursing experts. The validation has suggested some specific modification in the demographic proforma and rating scale for risk assessment of acne. The modifications and suggestions of experts were incorporated in the final preparation of the tool.

Reliability of the instruments

The reliability of the tool was determined using split half method and test-retest method. Karl Pearson's 'r' was computed for finding out the reliability.

Rating scale for assessing the risk factor of acne	Split half method (r=0.84)
Global Acne Grading Scale	Test-retest method (r=0.87)
Rating scale for level of satisfaction	Test-retest method (r=0.88)

Pilot Study

According to Polit and Beck (2010), a pilot study is a miniature or some part of actual study, in which the instrument is administered to the subjects drawn from the population. It is a small scale version done in preparation for the major study. The purpose was to find out the feasibility and practicability of main study design. The pilot study was conducted with six adolescent girls who are studying in Apollo College of Nursing. The study was carried out for a period of one week. The application was found to be feasible.

Interventional Protocol

For the experimental group, cucumber was washed and finely grated. The participants were asked to wash the face thoroughly with plain water and then grated cucumber was applied evenly over face and neck for duration of 20-30 minutes and then washed off with plain water. The intervention was carried out for 30 days. At the end of one month the researcher did a post test using global acne grading scale to assess the effectiveness of the intervention. The level of satisfaction was also assessed in the experimental group of adolescent girls.

Protection of Human Rights

- The study was conducted after the approval of ethical committee, Apollo Hospitals, Chennai.
- Obtained permission from Principal, Apollo college of Nursing, and Principal of Billroth College of nursing where the study was conducted.
- The participants were explained about the study and written consent was obtained after providing assurance and developing confidence.
- Confidentiality of the data was maintained throughout the study.

Data Collection Procedure

Data collection is gathering information about something which the researcher has chosen to explore or investigate (Crookes and Davies, 1998). Permission to conduct study was obtained from concerned colleges. Verbal consent

was obtained from the participants. Rapport was established by a brief introduction about the research purpose.

The participants were selected using purposive sampling technique among which 30 participants were assigned in control group and 30 were assigned in experimental group.

All the participants were asked to fill the demographic variable proforma. Then the researcher identified the risk factors and severity of acne in both control and experimental group of adolescent girls. Then cucumber was washed and finely grated. The participants were asked to wash the face thoroughly with plain water and then grated cucumber was applied evenly over face and neck with a gloved hand. It was allowed to stay for of 20-30 minutes on the face and then washed off with plain water. Separate bowls were provided for each participant. Thorough hand washing was carried out by the researcher in between each application. The intervention was carried out for 30 days. At the end of one month the researcher did a post test to assess the effectiveness of the intervention. The level of satisfaction was also assessed in the experimental group of adolescent girls.

Problems Faced During Pilot Study

The problem faced during pilot study was that the participants did not have a convenient time for the intervention.

Plan for Data Analysis

Data analysis is the systematic organization and synthesis of research data and testing of null hypotheses by using the obtained data (Polit & Beck, 2008). Data was analyzes using appropriate descriptive and inferential statistics.

Descriptive statistics such as mean, median, frequency, standard deviation and percentage were used to describe the demographic variables and risk factors of acne. Inferential statistics such as‘t’-test was used to analyze the difference in emotional balance scores between pre and post tests of control and experimental group. The association between the selected demographic variables and severity of acne was assessed by using Chi-square test.

Summary

This chapter dealt with the selection of research approach, research design, setting, sample, sampling technique, sampling criteria, selection and development of study instruments, psychometric properties of study instruments, pilot study, and protection of human rights, data collection procedure and plan for data analysis. The following chapter deals with analysis and interpretation using descriptive and inferential statistics**.**

CHAPTER – IV

ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of data collected on number of issues from various sources. Statistics is a field of study concerned with techniques or methods of data collection, classification, summarising, interpretation, drawing inferences, testing of hypothesis, making recommendations etc. (Mahajan 2004)

Data was collected from 60 adolescent girls having acne at Apollo College of nursing, Chennai 95, among them 30 in control group and 30 in experimental group to determine the effectiveness of grated cucumber upon acne. The data was analysed according to the objectives and hypothesis of the study.

The data was analysed, tabulated and interpreted using descriptive and inferential statistics.

Organisation of the Findings

The findings of the study were organized and presented under the following headings:

- Frequency and percentage distribution of demographic variables of adolescent girls in the control and experimental group.
- Frequency and percentage distribution of risk assessment of acne in adolescent girls.

- Frequency and percent distribution of pre and post test severity of acne according to global acne grading scale in control and experimental group of adolescent girls.

- Comparison of Mean and Standard Deviation of Pre test and post test severity of acne in control and experimental group of adolescent girls after the application of grated cucumber.

- Frequency and percentage distribution of level of satisfaction of adolescent girls on application of grated cucumber in experimental group.

- Association between the selected demographic variable and severity of acne in control group measured by global acne grading scale.

- Association between the selected demographic variable and severity of acne in experimental group measured by global acne grading scale.

Table. 1

Frequency and Percentage Distribution of demographic variables (age, type of family, income,) in the control and experimental group of adolescent girls.

Demographic variables	Control group (n=30)		Experimental group (n=30)	
	n	p	n	p
Education				
B.Sc Iyr	30	100	30	100
B.Sc IIyr	-	-	-	-
Type of family				
Nuclear	30	100	30	100
Joint	-	-	-	-
Age attained menarche				
10-11years	-	-	-	-
12-13years	13	43.3	18	60
14-15years	17	56.7	12	40
Dietary pattern				
Vegetarian	3	10	-	-
Non- vegetarian	27	90	30	100
Family history				
Yes	22	73.3	21	70
No	8	26.7	9	30

The data in table 1 reveals that a significant percentage of adolescent girls attained menarche between the age group of 14-15yrs (56.7%) in control and 60% of them attained menarche between 12-13yrs in experimental group. Majority (73.3%, 70%) of them had family history of acne in control and experimental group of adolescent girls. most of them (43.4%, 66.6%) are having acne for more than 1 year in control and experimental group of adolescent girls respectively.

Fig.3 shows the percentage distribution of age in years of adolescent girls of control and experimental group. Majority (83.3%) of the adolescent girls are in the age group of 18-19 years in both control and experimental group.

Fig.4 shows the percentage distribution of income per month of adolescent girls of control and experimental group. It is noted that most of them (63.3%) have a family income around Rs.15,001- 20,000.

Fig.5 shows the percentage distribution of duration of acne in months of adolescent girls of control and experimental group. It is noted that most of them (43.3%, 66.6%) had acne for more them 1 year respectively.

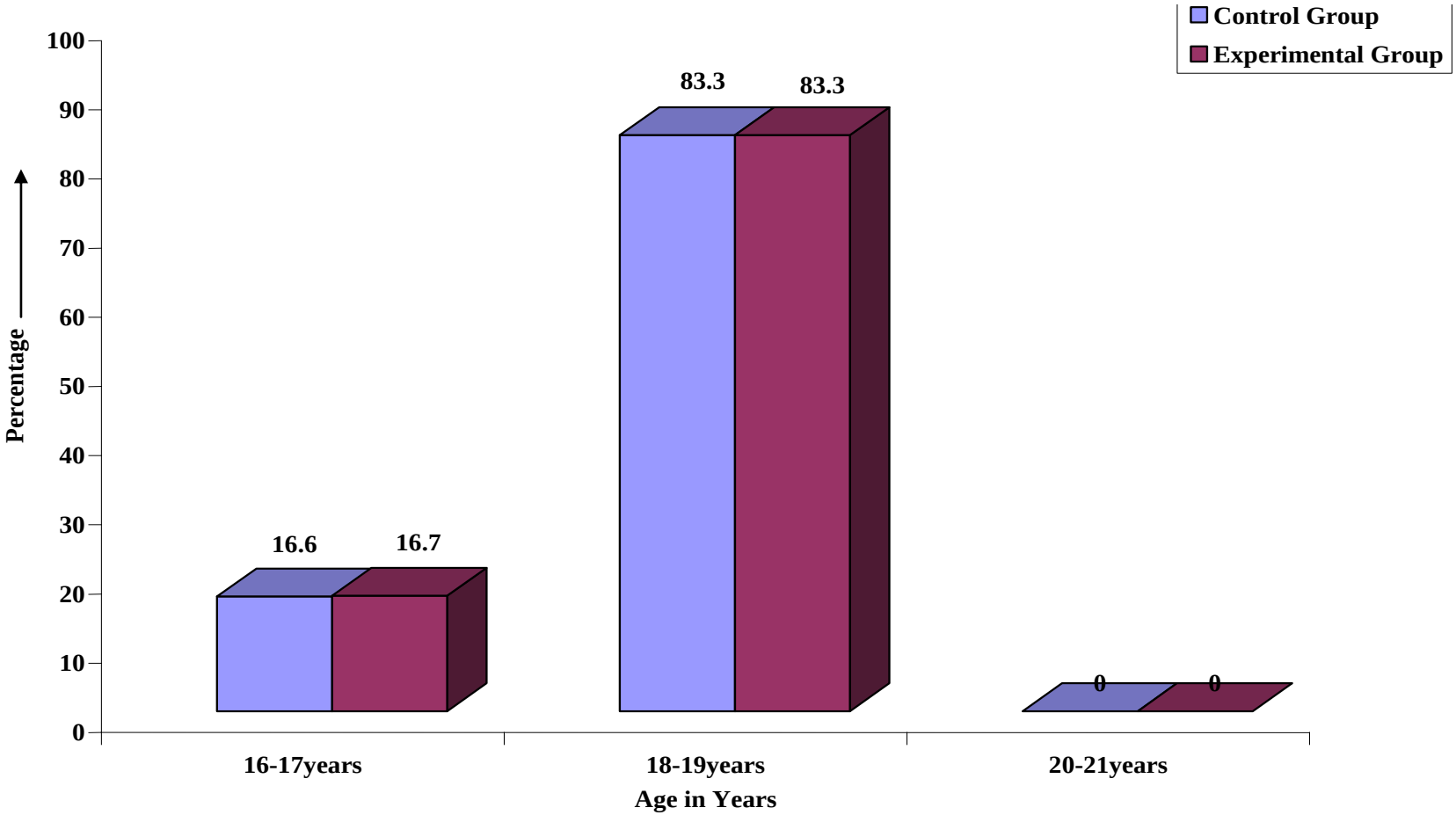

Fig. 3 Percentage Distribution of Age in years of Adolescent Girls of Control and Experimental Group

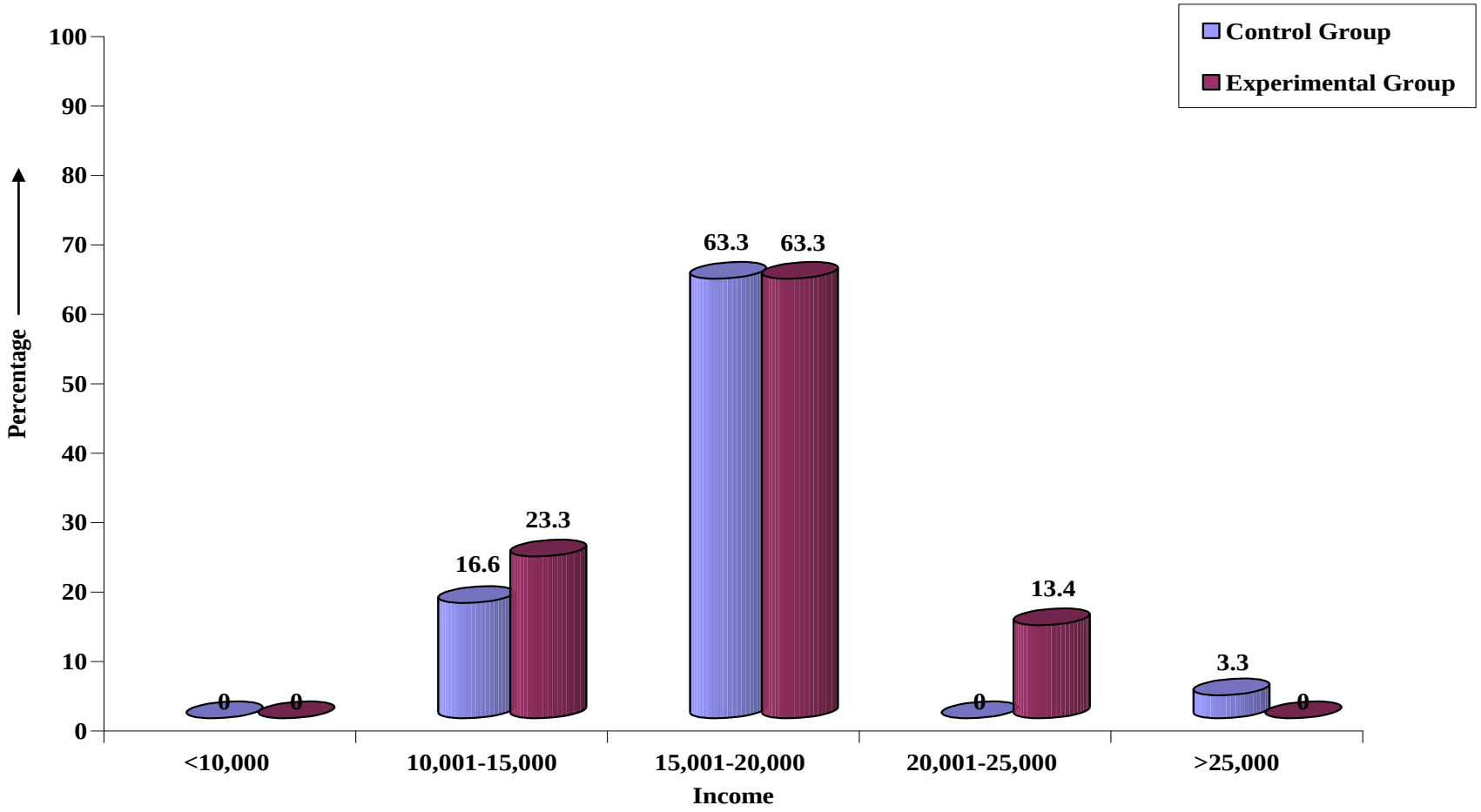

Fig. 4 Percentage Distribution of Family Income Per month of Adolescent Girls of Control and Experimental Group

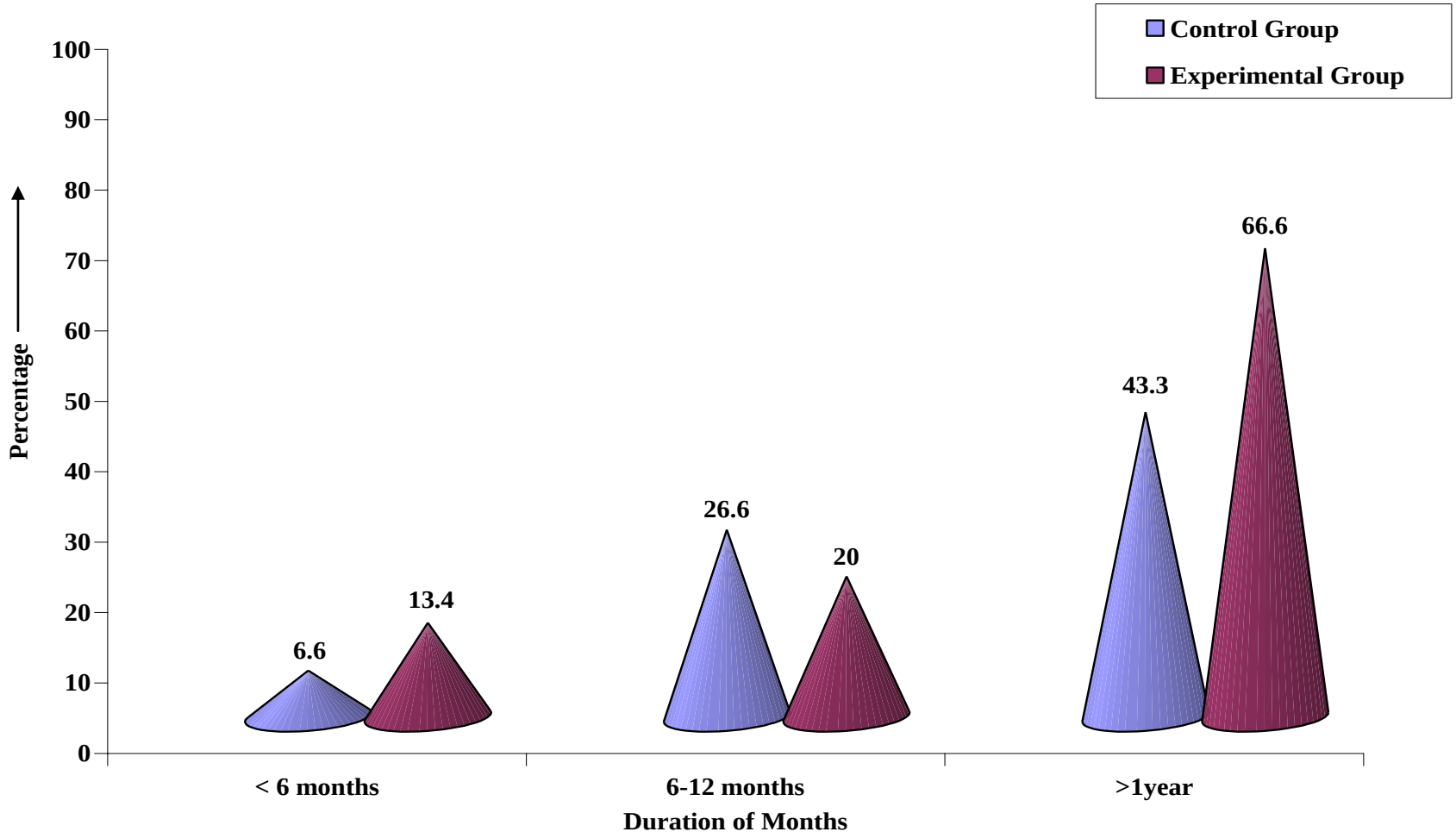

Fig.5 Percentage Distribution of Duration of Acne in Months of Adolescent Girls of Control and Experimental Group

Fig.6 shows that majority of the adolescent girls of control group and experimental group were at moderate risk (76.6%) of acne.

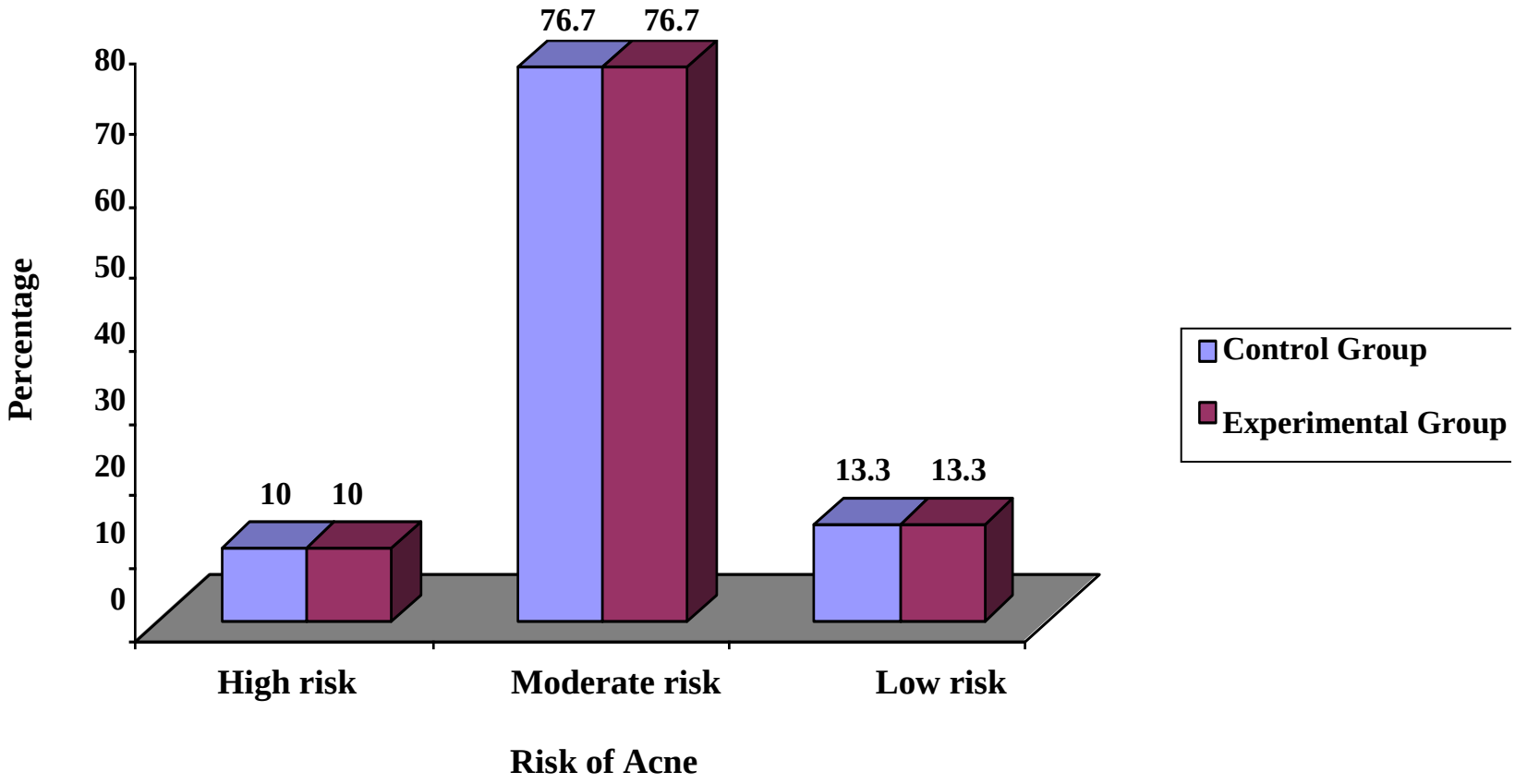

Fig.6 Percentage Distribution of Risk of Acne of Adolescent Girls of Control and Experimental Group

Table.2

Frequency and Percentage Distribution of Pre and Post Test Severity of Acne According to Global Acne Grading Scale in Control and Experimental Group of Adolescent Girls.

Severity of acne	Control Group (n=30)				Experimental group (n=30)			
	Pre test		Post test		Pre test		Post test	
	n	p	n	p	n	p	n	p
Mild	6	20	5	16.7	4	13.3	17	56.7
Moderate	17	56.7	17	56.7	15	50	13	43.3
Severe	7	23.3	8	26.7	11	36.7	-	-
Very severe	-	-	-	-			-	-

The data presented in the table 2 shows that, majority (56.7%) of them in control group were having moderate acne and remaining of them (20% and 23.3%) were having mild and severe acne during pre-test. The post-test score showed that most of them (56.6%) remained unchanged from moderate acne. In experimental group, majority of them (50%) were having moderate acne and 13.3% and 36.7% were having mild and severe acne. And during post-test it reduced to 57.6% having mild acne and 43.3% having moderate acne.

Table.3

Comparison of Mean and Standard Deviation of Pre Test and Post Test Severity of Acne in Control and Experimental Group of Adolescent Girls after the Application of Grated Cucumber.

No.	Control group n=30		Experimental group n=30		't' value
	Mean	SD	Mean	SD	
Pre-test	25.5	5.0	27.8	6.5	1.4
Post-test	26.4	6.2	18.2	3.9	6.4***

(p<0.001)

The data presented in table 3 depicts that the difference in mean and standard deviation of severity of acne before application of grated cucumber (M=25.5, 27.5, SD=5.0, 6.5) between control and experimental group is not statistically significant ($p < 0.05$). Whereas after the application of grated cucumber the difference in the mean and standard deviation (M=26.4, 18.2, SD=6.2, 3.9) of severity of acne between control and experimental group of adolescent girls is statistically significant ($p < 0.001$). Severity of acne scores is significantly low after the application of grated cucumber in experimental group of adolescent girls. Hence null hypothesis Ho_1 is rejected

Fig.7 reveals that most of them (80%) were highly satisfied and few of them were moderately satisfied (20%).

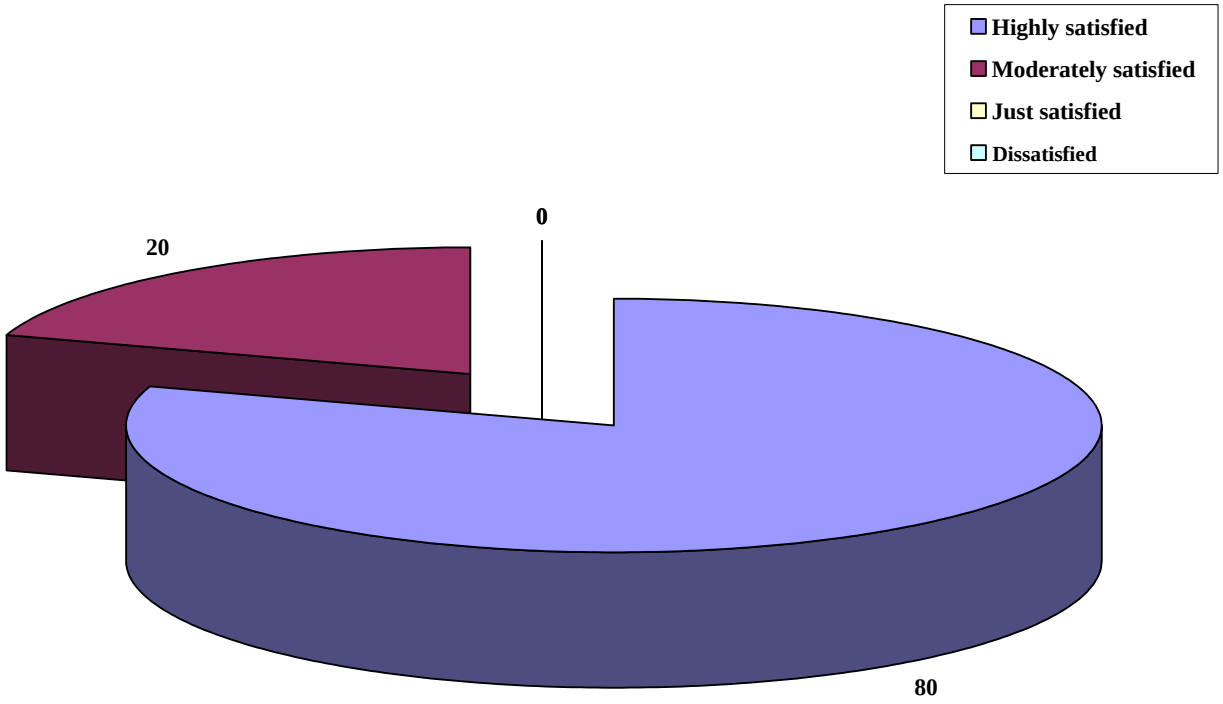

Fig.7 Percentage Distribution of Level of Satisfaction of Adolescent Girls after the Application of Grated Cucumber

Table. 4

Association between the Selected Demographic Variable and Severity of Acne in Adolescent Girls in Control Group Measured By Global Acne Grading Scale.

(N= 30)

Demographic variables	Global acne grading scale				χ^2
	Up to mean		Above mean		
	n	p	n	p	
Age					
<18years	2	6.6	12	40	0.02
18 and above	2	6.6	14	46.6	df=1
Family income per month					
<20,000	4	13.3	16	53.3	2.307
>20,000	0	0	10	33.3	df=1
Age attained menarche					
<12years	2	6.6	19	63.3	0.87
12 and above	2	6.6	7	23.3	df=1
Diet					
Vegetarian	3	10	18	60	0.054
Non-vegetarian	1	3.3	8	26.6	df=1
Family history of acne					
Yes	1	3.3	13	43.3	0.87
No	3	10	13	43.3	df=1
Duration of acne					
>1year	1	3.3	9	30	0.144
>1year	3	10	17	56.6	df=1

The above data reveals there was no association between the selected demographic variables and severity of acne in adolescent girls in control group. Hence the null hypothesis Ho_2 was rejected.

Table.5

Association between the Selected Demographic Variable and Severity of Acne in Experimental Group Measured by Global Acne Grading Scale.

(N= 30)

Demographic variables	Global acne grading scale				χ^2
	Up to mean		Above mean		
	n	p	n	p	
Age					
<18years	5	16.6	4	13.3	0.334
18 and above	14	46.6	7	23.3	df=1
Family income per month					
<20,000	10	33.3	1	3.3	5.68
>20,000	9	30	10	33.3	df=1
Age attained menarche					
<12years	13	43.3	11	36.6	4.35
>12years	6	20	0	0	df=1
Family history of acne					
Yes	13	43.3	9	30	0.639
No	6	20	2	6.6	df=1
Duration of acne					
<1year	17	56.6	8	26.6	1.406
>1year	2	3.3	3	10	df=1

The above data reveals there was no association between the selected demographic variables and severity of acne in adolescent girls in experimental group. The null hypothesis Ho_2 was rejected.

CHAPTER V

DISCUSSION

Statement of the problem

A Quasi-Experimental Study to Assess the Effectiveness of Grated Cucumber upon Acne in Adolescent Girls at Selected Colleges, Chennai.

Objectives of the Study

1. To assess the severity of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

2. To find out the effectiveness of grated cucumber upon the severity acne in experimental group of adolescent girls.

3. To determine the level of satisfaction regarding the application of grated cucumber in experimental group of adolescent girls.

4. To find out the association between selected demographic variables and degree of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

An experimental design was adopted for this study. Convenient sampling technique was used to select 30 in control group and 30 in experimental group from Apollo College of nursing and Billroth College of nursing. The demographic proforma, rating scale to assess the risk factors of acne, global acne grading scale and rating scale to assess the level of satisfaction were the tools used to collect data,

after establishing validity and reliability. The main data collection was done after determining the feasibility and practicability through pilot study.

The severity of acne was checked for both control and experimental group before and after application of grated cucumber. The level of satisfaction on application of grated cucumber was assessed .The data was tabulated and analyzed by using descriptive and inferential statistics.

Demographic variables of adolescent girls

Significant percentage of the adolescent girls was in the age group between 16-19years (83.3, 16.7%). Majority of them (43.3, 56.7% and 60, 40%) had attained menarche at the age of 12-15years of age in both control and experimental group.

Most of adolescent girls are non-vegetarians (90% and 100%). In 2009 a systematic literature review of 21 observational studies and 6 clinical trials, the association between acne and diet was evaluated. Observational studies, including 2 large controlled prospective trials, reported that cow's milk intake increased acne prevalence and severity. Furthermore, prospective studies, including randomized controlled trials, demonstrated a positive association between a high-glycemic diet, hormonal mediators, and acne risk. Based on these findings, there exists convincing data supporting the role of dairy products and acne prevalence and severity. It emphasizes the importance of maintaining a balanced diet for the adolescent girls.

The first objective was to assess the severity of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

A significant percentage (56.7%) of them in control group had moderate acne and (20%, 23.3%) had mild and severe acne during pre-test. In experimental group, majority of them (50%) were having moderate acne and (13.3%, 36.7%) were having mild and severe acne.

Numerous studies have shown that alternative therapies are safe and effective in the treatment of acne. In a study in which 45 patients with mild-to-moderate acne were treated with high-intensity pure blue light (two 20-minute treatments per week for four to eight weeks), 50% were highly satisfied with the treatment, 20% had complete clearing at eight weeks, and no side effects were reported (Tremblay 2006). This was consistent with the findings of present study. While in yet another consistent study investigators reported that 85% of acne had cleared two months after eight pulsed-light and heat-energy treatments (Elman 2004). Thus the researcher concluded that severe level of acne can be brought to moderate to mild if appropriate measures are taken.

The second objective was to find out the effectiveness of grated cucumber upon the severity of acne in experimental group of adolescent girls

Majority (56.7%) of them in control group was having moderate acne and (20% ,23.3%) was having mild and severe acne during pre-test. The post-test score showed that most of them (56.6%) remained unchanged from moderate acne and rest of them (16.7%,26.7%) were in mild and severe acne. In experimental group, majority of them (50%) were having moderate acne and (13.3%,36.7%) were having

mild and severe acne. And during post-test it reduced to 57.6% having mild acne and 43.3% having moderate acne. The difference in mean and standard deviation of severity of acne before application of grated cucumber (M=25.5, 27.5, SD=5.0, 6.5) between control and experimental group is not statistically significant ($p < 0.05$). Whereas, after the application of grated cucumber the difference in the mean and standard deviation (M=26.4, 18.2, SD=6.2, 3.9) of severity of acne between control and experimental group of adolescent girls is statistically significant ($p < 0.001$). Severity of acne scores is significantly low after the application of grated cucumber in experimental group of adolescent girls. Hence null hypothesis Ho_1 is rejected.

The third objective was to assess the of level of satisfaction of adolescent girls after the application of grated cucumber

Majority of the adolescent girls were highly satisfied (80%) with the application of grated cucumber. This interprets that application of grated cucumber was highly effective in reducing the severity of acne among adolescent girls. Thus we should understand the importance of alternative therapies and should encourage its practice.

The fourth objective was to find out the association between the selected demographic variable and severity of acne in adolescent girls in control and experimental group of adolescent girls as measured by global acne grading scale

There was no significant association between selected demographic variables and severity of acne in the control and experimental group. Hence the null hypothesis Ho_2 is rejected.

Summary

This chapter has dealt with the discussion of various aspects of the study findings, this emphasized on the objectives of the study, major findings of the demographic variables, comparison of severity of acne before and after application of grated cucumber in control and experimental group, association between selected demographic variables with severity of acne among adolescent girls in both the groups and the level of satisfaction regarding application of grated cucumber in experimental group adolescent girls.

CHAPTER-VI

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS

The heart of the study is writing report of the findings. The investigator concise the whole study and made it for future references. This chapter deals with the summary, conclusion, implications and recommendations of the study.

Statement of the Study

A Quasi-Experimental Study to Assess the Effectiveness of Grated Cucumber upon acne in Adolescent Girls at Selected Colleges, Chennai.

Objectives of the Study

5. To assess the severity of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

6. To find out the effectiveness of grated cucumber upon the severity acne in experimental group of adolescent girls.

7. To determine the level of satisfaction regarding the application of grated cucumber in experimental group of adolescent girls.

8. To find out the association between selected demographic variables and degree of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

Null Hypothesis

Ho_1: There will be no significant difference in the severity of acne before and after the application of grated cucumber in control and experimental group of adolescent girls.

Ho_2: There will be no significant relationship between selected demographic variable and the severity of acne before and after application of grated cucumber in control and experimental group of adolescent girls.

The conceptual framework of the study was developed on the basis of Ernestine Weidenbach's Helping Art of Clinical Nursing theory (1964), which was modified for the present study. An extensive review of literature and guidance by experts formed the foundation to the development of Demographic variables proforma, rating scale to assess the risk factors of acne, Global acne grading scale and rating scale to assess the level of satisfaction of adolescent girls in experimental group.

A Quasi experimental design was used in this study. The present study was conducted in Apollo College of nursing (experimental group) and Billroth college of nursing (control group). A sample size of 60 who meet the inclusion criteria were chosen for this study, in that 30 was taken for control group and 30 was taken for experimental group through randomization of settings. Purposive sampling technique was used to select the settings and samples from the respective settings.

The data collection tools were validated and the reliability was established through test-retest and split half technique. The researcher used validated tool for collecting data. After the pilot study, the data for the main study was collected by using self-administered structured questionnaire method. The data was collected by

using Demographic variables proforma, rating scale to assess the risk factor of acne, Global Acne grading scale and rating scale to assess the level of satisfaction of application of grated cucumber. The data collection tools were validated and reliability was established. After the pilot study, the data collection for main study was conducted for 30 days. The collected data was tabulated and analyzed by using appropriate descriptive and inferential statistics.

Major Findings of the Study

Demographic variables of adolescent girls.

Majority (83.3%) of the adolescent girls were in the age group 18-19yrs, with family income between Rs.15,001- 20,000 (63.3%) attained menarche during 14-15 years (56.7%) in control group and 60% of adolescent girls attained menarche during 12-13 years in experimental group. Most of them had family history of acne (73.3%, 70%), having acne for more than one year (43.4%, 66.6%).

Frequency and percentage distribution of risk assessment of acne in adolescent girls.

Most of the adolescent girls of control group and experiment group were in moderate risk (76.6%).

Frequency and percent distribution of pre and post test severity of acne according to global acne grading scale in control and experimental group of adolescent girls.

Most (56.7%) of them in control group were having moderate acne and remaining of them (20% and 23.3%) was having mild and severe acne during pre-test. The post-test score showed that most of them (56.6%) remained unchanged

from moderate acne and rest of them (16.7% and 26.7%) were in mild and severe acne. In experimental group, majority of them (50%) were having moderate acne and 13.3% and 36.7% were having mild and severe acne. And during post-test it reduced to 57.6% having mild acne and 43.3% having moderate acne.

Mean and Standard Deviation of Pre test and post test severity of acne in control and experimental group of adolescent girls after the application of grated cucumber.

There is significant difference between the pre test and post test values of severity of acne in experimental group. Thus the null hypothesis Ho_1 was rejected with this regard.

Frequency and Percentage distribution of level of satisfaction of adolescent girls after the application of grated cucumber

Most of them (80%) were highly satisfied and few of them were moderately satisfied (20%).

Association between the selected demographic variable and severity of acne in adolescent girls in control group measured by global acne grading scale

There was no association between the selected demographic variables and severity of acne in adolescent girls. The null hypothesis Ho_2 was rejected with this regard.

Conclusion

The findings of the study indicate that acne is a major problem faced by the adolescent age group. Application of grated cucumber is simple, easy to

implement, economic and has no side effects and an acceptable method to reduce the severity of acne among adolescent girls.

Implications

The findings of the study have implications in Nursing practice, Nursing education, Nursing administration and Nursing research. By assessing the effectiveness of application of grated cucumber we get clear pictures regarding different steps to be taken in all these fields to improve the standards of nursing profession.

Nursing Practice

It is well understood from the study that, natural remedies are effective in reducing the severity of acne. The cognitive reconstruction helps to modify the behaviour and attitude towards acne and its control. Most of the adolescent girls are accustomed to the conventional method and may also take some time to adapt to a new method. In this context, the nurse can also suggest natural remedies which minimize the use of medications which may end up in a series of adverse effects. Nurses should be knowledgeable and utilise the results revealed by evidence based studies in managing common adolescent problems.

Nursing education

The nurse educators should suitably involve the concept of natural remedies in nursing profession. The nurse should have knowledge about the risk factors of acne. Nurses can be educated about the health benefits of cucumber. Integration of theory and practice is a vital concept in modern nursing. The contemporary medicine is now-a-day's incorporating alternative and complimentary

therapies for treatment. Hence the nurse educators can educate the novice nurses on the benefits of such therapies in health promotion.

Nursing administration

In accordance to the technological advances and ever growing challenges of health care emphasis, the nurse administrator must have a responsibility to provide nurse with substantiating continuing education opportunities. This will enable the nurse to update their knowledge acquiring skills and demonstrate high quality care. Nurse administrators should initiate in organizing the continuing nursing education programme on natural remedies of common adolescent problems for the health personnel in hospital and in community settings. Nurse administrator can provide and evaluate these natural remedies.

Nursing research

There is a need for extensive and intensive research in areas of alternative and comprehensive therapies. The findings are disseminated through seminars, conferences, publications in journals and World Wide Web. Thus it opens a big arena for research on natural remedies and thus it will benefit for a wider community.

Nursing theory

A conceptual and theoretical model exclusively for natural remedies for various ailments is yet to be developed. The present study is based on Ernestine Wiedenbach's Helping Art of Clinical Nursing theory 1964.

Recommendations

The study recommends the following in future research

- A similar study can be conducted on larger sample size to generalize the findings.
- The study can be conducted in different settings with some other common problems in children
- A comparative study can be done by comparing any 2 natural remedies for acne among adolescent girls.
- A longitudinal study can be done to identify the effectiveness of natural remedies upon various skin problems.

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APPENDIX – I

LETTER SEEKING PERMISSION TO CONDUCT STUDY

Apollo College of Nursing

(Recognised by the Indian Nursing Council and Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

CO/0420/12 ***26.06.2012***

To

Ms.Amala Valsan
M.Sc (N) II year
Apollo College of Nursing
Chennai – 600 095.

Sub.: To grant permission for research study – Reg.

Greetings! *With reference to your letter, you are permitted to conduct a study on* ***"An experimental study to assess the effectiveness of grated cucumber upon acne in adolescent girls at selected nursing colleges, Chennai"****.*

So I kindly request your goodselves to permit me to conduct study in your esteemed institution.

Thanking You,

Dr. LATHA VENKATESAN
PRINCIPAL

IS/ISO 9001:2000

Vanagaram to Ambattur Main Road, Ayanambakkam, Chennai - 600 095.
Ph. : 044 - 2653 4387 Tele fax : 044 - 2653 4923 / 044- 2653 4386

APPENDIX II

LETTER PERMITTING TO CONDUCT THE STUDY

Apollo College of Nursing

(Recognised by the Indian Nursing Council and Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

CO/0420/12 ***26.06.2012***

To

Ms.Amala Valsan
M.Sc (N) II year
Apollo College of Nursing
Chennai – 600 095.

Sub.: To grant permission for research study – Reg.

Greetings! *With reference to your letter, you are permitted to conduct a study on* ***"An experimental study to assess the effectiveness of grated cucumber upon acne in adolescent girls at selected nursing colleges, Chennai"****.*

So I kindly request your goodselves to permit me to conduct study in your esteemed institution.

Thanking You,

Dr. LATHA VENKATESAN
PRINCIPAL

IS/ISO 9001:2000

Vanagaram to Ambattur Main Road, Ayanambakkam, Chennai - 600 095.
Ph. : 044 - 2653 4387 Tele fax : 044 - 2653 4923 / 044- 2653 4386

APPENDIX - III

ETHICAL COMMITTEE CLEARANCE LETTER

Ethics Committee

Apollo HOSPITALS
TOUCHING LIVES

Dr. Nalini Roa	Social Worker	EC-Member
Ms. N. Suseela	Retired English Teacher	Layperson
Ms. Maimoona Badsha	Lawyer	Lawyer
Dr. Paul Dilipkumar	Clinician	EC-Member
Dr. V. Balaji	Clinician	EC-Member
Dr. M. A. Raja	Consultant Medical Oncologist	EC-Member

After due ethical and scientific consideration, the Ethics Committee has approved the above presentation submitted by you.

The EC review and approval of the report is only to meet their academic requirement and will not amount to any approval of their conclusions / recommendations as conclusive, deserving adoption and implementation, in any form, in any healthcare institution.

The Ethics Committee is constituted and works as per ICH-GCP, ICMR and revised Schedule Y guidelines.

With Regards,

Date: 30/8/12

Dr. Rema Menon,
Ethics Committee-Member Secretary,
Apollo Hospitals, Chennai,
Tamil Nadu, India.

Dr. REMA MENON
MEMBER SECRETARY
ETHICS COMMITTEE, APOLLO HOSPITALS
APOLLO HOSPITALS ENTERPRISE LIMITED
CHENNAI-600 006, TAMILNADU

Apollo Hospitals Enterprise Limited
21, Greams Lane, Off Greams Road, Chennai - 600 006
Tel : 91 - 44 - 2829 3333 Extn : 6008, 91 - 44 - 2829 5465 Extn : 6639 Fax : 91 - 44 - 2829 4449
E - Mail : ecapollochennai@gmail.com

Ethics Committee

Apollo HOSPITALS
TOUCHING LIVES

30th August 2012

To,

Ms. Amala Valsan
2nd Year M.Sc (Nursing),
Department of Pediatric Nursing,
Apollo College of Nursing,
Chennai.

Ref: A Quasi-experimental study to assess the effectiveness of grated cucumber upon acne in adolescent girls at selected college, Chennai.

Sub: Approval of the above referenced project and its related documents.

Dear Ms. Amala Valsan,

Ethics Committee-Apollo Hospitals has received the following document submitted by you related to the conduct of the above-referenced study.

- Project proposal.
- Participant consent form.

The Ethics Committee-Apollo Hospitals reviewed and discussed the study proposal documents submitted by you related to the conduct of the above referenced study at its meeting held on 29th August 2012.

The following Ethics Committee Members were present at the meeting held on 29th August 2012.

Name	Profession	Position in the committee
Mr. S. S. Narayanan	Ethicist	Chairman
Dr. Rema Menon	Clinician	Member Secretary
Dr. Radha Rajagopalan	Clinician	EC-Member
Dr. Krishnakumar	Clinician	EC-Member
Dr. Vijaya Kumar	Clinician	EC-Member
Dr. Clive Fernandes	Consultant Clinical Pharmacologist	Basic Medical Scientist
Dr. Nalini Roa	Social Worker	EC-Member

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E - Mail : ecapollochennai@gmail.com

APPENDIX- IV

REQUEST FOR CONTENT VALIDITY
LETTER REQUESTING OPINIONS AND SUGGESTIONS OF EXPERTS FOR ESTABLISHING CONTENT VALIDITY OF RESEARCH

From
Ms. Amala Valsan,
M.Sc., (Nursing) II Year,
Apollo College of Nursing,
Chennai -95.

To

Through Proper channel,
Dr. Latha Venkatesan,
Principal,
Apollo College of Nursing, Chennai 95

Sub: Request for opinions and suggestions of experts for content validity of Research tool.

Respected Sir/ Madam

Greetings! As a part of the Curriculum Requirement the following research title is selected for the study. **"A Quasi Experimental Study to Assess the Effectiveness of grated cucumber upon acne in adolescent girls at selected colleges, Chennai".**

I will be highly privileged to have your valuable suggestions with regard to the establishment of Content Validity of Research tool. So, I request you to validate my Research tool and give suggestions about the tool.

Thanking You,

Yours Sincerely,

(Mrs.Amala Valsan)

APPENDIX –V

LIST OF EXPERTS FOR CONTENT VALIDITY

1. **Dr. Latha Venkatesan, M.Sc (N)., M.Phil., Ph.D.,**
   Principal and Professor,
   Apollo college of Nursing, Chennai - 95.

2. **Prof. Lizy Sonia, A., M.Sc. (N), Ph.D (N)**
   Vice Principal & Professor in Nursing,
   HOD of Medical Surgical Nursing,
   Apollo College of Nursing, Chennai - 95.

3. **Mrs. Vijayalakshmi, M.Sc (N), Ph.D (N)**
   Professor and HOD
   Department of mental health nursing,
   Apollo College of nursing, Chennai – 95

4. **Mrs. Nesa Sathya Satchi, M.Sc. (N),**
   Professor and HOD
   Department of Child Health Nursing,
   Apollo College of Nursing, Chennai - 95

5. **Mrs. Shobana. G, M.Sc (N)**
   Professor and HOD
   Department of community Health Nursing,
   Apollo College of Nursing, Chennai – 95

6. **Mrs. Stella Mary, I., M.Sc. (N),**
   Reader,
   Department of Mental Health Nursing,
   Apollo College of Nursing, Chennai – 95

7. **Mrs. Cecilia Mary, MSc(N),**
   Lecturer,
   Department of Child Health Nursing,
   Apollo College Of nursing, Chennai -95

APPENDIX -VI

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the research tool and interventional programme of Ms. Amala Valsan, MSc(N) II year student who is undertaking research study on **"A Quasi Experimental Study to Assess the Effectiveness grated cucumber upon acne in adolescent girls at selected colleges, Chennai".**

Signature of Expert

Name and designation

APPENDIX -VII

LETTER SEEKING PERMITION TO USE GLOBAL ACNE GRADING SCALE

From,

Amala Valsan

M.Sc Nursing (Pediatric nursing dept)

Apollo College of nursing,

Chennai, Tamil Nadu

India

To,

Department of Dermatology

Massachusetts General Hospital,

Boston, US.

Sub: Seeking permission for using Global Acne Grading Scale (GAGS)

Respected Sir/Madam,

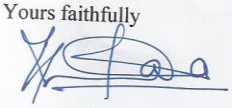
With due respect I, **Ms. Amala Valsan** studying M.Sc Nursing IInd year, would like to state that as a part of my curriculum requirement, I am planning to do a research. The statement of research goes like **"An experimental study to assess the effectiveness of grated cucumber upon acne in adolescent girls at selected college, Chennai.** For the same, I would like to use Global Acne Grading Scale (Academic purpose only) which was devised by Mr. Doshi. A, Mr. Zaheer. A and Mr. Stiller M.J in 1997 in your esteemed institution.

Please consider my request and grant me permission for the same. Expecting reply through e-mail to angelamala0519@gmail.com

Date: 13/7/12

Place: CHENNAI.

Yours faithfully



APPENDIX - VIII

PLAGIARISM ORIGINALITY REPORT

Plagiarism Detector - Originality Report

Plagiarism Detector Project: [WWW.plagiarism-detector.com] application core version : 331

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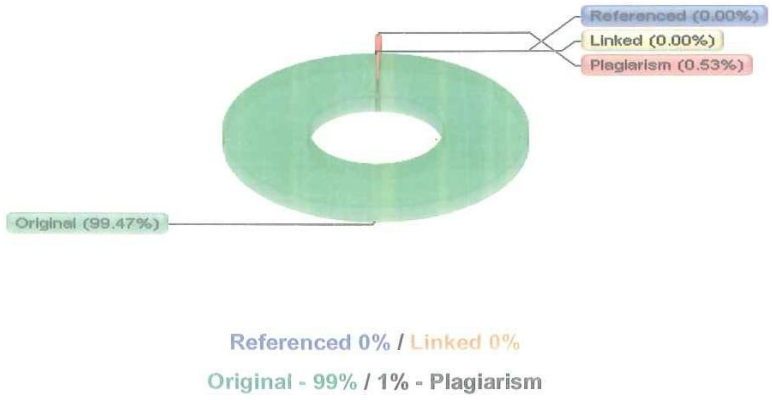


APPENDIX - IX

RESEARCH PARTICIPANT CONSENT FORM

Dear participant,

I am Ms. Amala Valsan, M.Sc (N) student of Apollo College of nursing, Chennai. As a part of my curriculum, I have selected a research on "**A Quasi experimental study to assess the effectiveness of grated cucumber upon acne in adolescent girls at selected college, Chennai."**

I hereby seek your consent and co-operation to participate in the study. The study will be beneficial for the participants in all ways. Please be frank and honest in your response. The obtained information will be kept confidential and anonymity will be maintained.

Signature of the researcher

I, …… hereby give my consent to participate in the study.

Signature of the participant

APPENDIX-X

CERTIFICATE FOR ENGLISH EDITING

TO WHOM SOEVER IT MAY CONCERN

This is to certify that the dissertation "A Quasi Experimental Study to Assess the Effectiveness of Grated Cucumber upon Acne in Adolescent girls at Selected Colleges, Chennai." by Ms. Amala Valsan, M.Sc (N) II year, Apollo College of Nursing was edited for English language appropriateness.

Alice Joseph
Signature

Alice Joseph
Associate Professor
Dept. of English
Alphonsa College Pala
Kerala - 686574.

APPENDIX - XI

DEMOGRAPHIC VARIABLE PROFORMA OF ADOLESCENT DIRLS

Purpose

This proforma is used by the researcher to collect the information on demographic variables such as age, educational status, type of family, family income etc.

Instructions

The researcher will be collecting the needed information from the participants by interviewing. The collected information will be kept confidential and anonymity will be maintained.

Sample number:-

1 Age in years

1.1 16-17yrs ☐

1.2 18-19yrs ☐

1.3 20-21yrs ☐

2 Education

2.1 B.Sc (N) Iyear ☐

2.2 B.Sc (N) IIyear ☐

3 Type of family

3.1 Nuclear family ☐

3.2 Joint family ☐

4 Family income Rs._____/ month

4.1 <10,000 ☐

4.2 10,001 to 15,000 ☐

4.3 15,001 to 20,000 ☐

4.4 20,001 to 25,000 ☐

4.5 >25,000 ☐

5 Age attained menarche

5.1 11-12yrs ☐

5.2 13-14yrs ☐

5.3 15-16yrs ☐

6 Dietary pattern

6.1 Vegetarian ☐

6.2 Non-vegetarian ☐

7 Family history of Acne

7.1 Yes ☐

7.2 No ☐

8 Duration of acne _____ months

8.1 <6 months ☐

8.2 6-12 months ☐

>12 months ☐

APPENDIX - XII

RATING SCALE TO ASSESS THE RISK FACTORS FOR ACNE

Sample No:

Purpose

This rating scale is used to assess the risk factors for acne of the participants.

Instructions

There are twenty items given below. Each item has four options ranging from Always to Never. The researcher will obtain the information by administering the questionnaire to the participants. The collected information will be kept confidential and anonymity will be maintained.

No.	Items	Always	Often	Rarely	Never
		4	3	2	1
1	I like to eat chocolates				
2	I eat fried snacks				
3	I eat eggs				
4	I eat sweets				
5	I drink beverages like coffee, tea, sodas				
6	I like to have milk products				
7	I eat dried nuts				
8	I don’t eat fruits regularly				
9	I don’t wash my face regularly				
10	I have an oily skin				

11	I use make-up on my face				
12	I use facial scrubs				
13	I use sun-screen lotion on my face				
14	I have dandruff				
15	I use hair gel and hair sprays				
16	I have irregular menstrual cycles				
17	I have pre-menstrual symptoms				
18	I am emotionally stressed up				
19	I am physically stressed up				
20	My parents/siblings have acne				

SCORING INTERPRETATION

SCORING	INTERPRETATION
61-80	High risk
41-60	Moderate risk
20-40	Low risk

BLUEPRINT FOR RATING SCALE TO ASSESS THE RISK FACTORS

FOR ACNE

No	Diamensions	Item No.	Total no. of items	Percentage
1	Dietary pattern	1,2,3,4,5,6,7,8	8	40%
2	Personal hygiene	9,10,11,12,13,14,15	7	35%
3	Hormonal influence	16,17,18,19,20	5	25%
TOTAL			20	100%

APPENDIX - XIII

GLOBAL ACNE GRADING TOOL (GAGS)

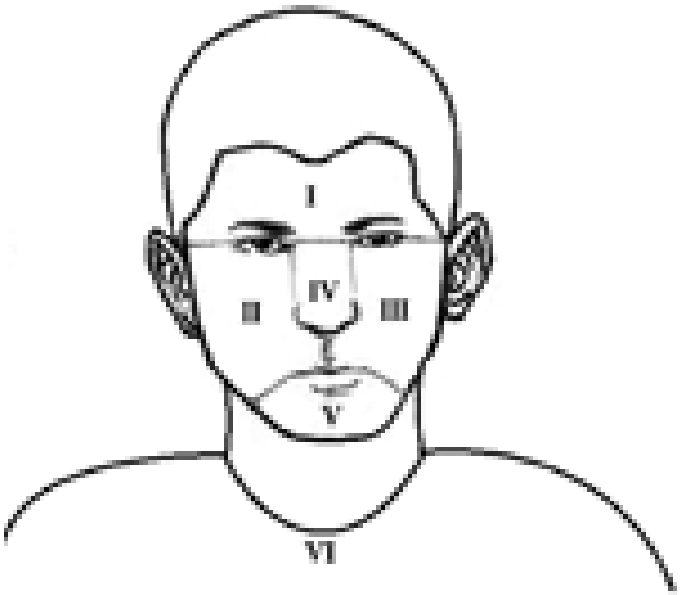
Sample No:

Purpose

This standardized acne grading tool is used to grade the acne according to severity

Instructions

The face is divided into six locations with score (forehead (2), each cheeks (2 each), nose (1), chin (1), chest and upper back (3)). These 6 locations are graded on a scale of 0-4 depending on the severity of lesions i.e. 0= no lesions, 1= comedones, 2= papules, 3= pustules, 4= nodules. The score for each area is the product of the most severe lesion, multiplied by the area factor. These individual scores are then added to obtain the total score. The researcher will obtain the information through observation.



Location	Factor (*F*)	Severity (*S*)			Local score (*F*×*S*)	Acne severity	
Forehead	2	0	Nil			Mild	1–18
Right cheek	2	1	Comedone			Moderate	19–30
Left check	2	2	Papule			Severe	31–38
Nose	1	3	Pustule			Very severe	>39
Chin	1	4	Nodule				
Chest and upper back	3						
		Total Score					

INTERPRETATION OF GLOBAL ACNE GRADING TOOL

SCORING	INTERPRETATION
1-18	Mild
19-30	Moderate
31-38	Severe
>39	Very severe

BLUE PRINT OF RATING SCALE ON THE LEVEL OF SATISFACTION AFTER APPLICATION OF GRATED CUCUMBER

No.	Item group	Item No.	Total no.of items	Percentage
1	Nature of treatment	1, 2, 3	3	30%
2	Nature of grated cucumber	4, 5, 6, 7	4	40%
3	Approach of the researcher	8, 9, 10	3	30%
Total			10	100%

APPENDIX-XIV

RATING SCALE ON THE LEVEL OF SATISFACTION AFTER APPLICATION OF GRATED CUCUMBER

Sample No.

Purpose

This scale is designed to assess the level of satisfaction of participants on whom grated cucumber was applied for a period of one month.

Instructions

There are ten items given below. Each item has four options ranging from highly satisfied to unsatisfied. Please be frank in answering the questions. The response will be kept confidential.

No.	Items	Highly satisfied	Moderately satisfied	Just satisfied	Dissatisfied
		4	3	2	1
1	I am satisfied with the non-pharmacological management of grated cucumber.				
2	I am satisfied with the duration of application of grated cucumber.				
3	I am satisfied with the researcher's explanation about the preparation.				

4	I feel the intervention is free from side effects.				
5	I feel it is easily available.				
6	I feel it is easy to prepare.				
7	I feel it is cost effective.				
8	I am satisfied with the researchers approach towards the participants.				
9	I am satisfied with the interpersonal relationship maintained by the researcher.				
10	I am satisfied with the researchers' explanation about the health benefits of cucumber.				

SCORING INTERPRETATION

SCORING	INTERPRETATION
>75%	Highly satisfied
75-50%	Moderately Satisfied
51-25%	Just satisfied
<25%	Unsatisfied

APPENDIX XV

DATA CODE SHEET

DEMOGRAPHIC VARIABLE PROFORMA

SN	**Sample Number**
1.	**AGE-Age in years**
1.1	16-17
1.2	18-19
1.3	20-21
2.	EDU- Education
2.1	BSc(N) Iyr
2.2	BSc (N) IIyr
3.	TOF- Type of family
3.1	Nuclear family
3.2	Joint family
4.	FIM- Family income per month
4.1	<10,000
4.2	10,001-15,000
4.3	15,001-20,000
4.4	20,001-25,000
4.5	>25,000
5.	AAM- Age attained menarche
5.1	11-12
5.2	13-14
5.3	15-16
6.	DP- Diatery pattern
6.1	Vegetarian
6.2	Non-vegetarian

APPENDIX-XVI

MASTER CODE SHEET CONTROL GROUP

CG	DEMOGRAPHIC VARIABLE PROFORMA								ARAS	GAGS	
	AGE	EDU	TOF	FIM	AAM	DP	FHA	DOA		PRE	POST
1	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.1	57	25	26
2	1.2	2.1	3.1	4.5	5.2	6.2	7.1	8.2	55	28	28
3	1.2	2.1	3.1	4.2	5.2	6.2	7.1	8.2	53	25	25
4	1.2	2.1	3.1	4.2	5.2	6.2	7.1	8.2	56	27	26
5	1.2	2.1	3.1	4.3	5.3	6.2	7.1	8.3	64	37	37
6	1.2	2.1	3.1	4.3	5.3	6.2	7.1	8.3	48	26	27
7	1.2	2.1	3.2	4.3	5.3	6.2	7.1	8.3	51	15	16
8	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.3	58	34	34
9	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.3	57	21	21
10	1.2	2.1	3.1	4.3	5.2	6.2	7.2	8.3	50	24	24
11	1.2	2.1	3.2	4.2	5.2	6.2	7.1	8.2	59	14	38
12	1.2	2.1	3.1	4.3	5.3	6.2	7.1	8.1	57	16	16
13	1.2	2.1	3.1	4.3	5.2	6.2	7.2	8.2	37	17	17
14	1.2	2.1	3.1	4.3	5.3	6.2	7.2	8.3	53	27	28
15	1.2	2.1	3.1	4.4	5.2	6.2	7.1	8.3	55	32	32
16	1.2	2.1	3.1	4.4	5.2	6.1	7.2	8.3	38	35	35
17	1.2	2.1	3.1	4.4	5.2	6.2	7.1	8.3	58	36	36
18	1.2	2.1	3.1	4.3	5.3	6.2	7.1	8.3	53	23	23
19	1.2	2.1	3.1	4.3	5.3	6.2	7.1	8.2	56	22	23
20	1.1	2.1	3.1	4.3	5.3	6.2	7.1	8.2	56	28	28
21	1.2	2.1	3.1	4.2	5.3	6.2	7.1	8.2	52	31	31
22	1.2	2.1	3.1	4.2	5.3	6.2	7.2	8.2	54	26	26
23	1.2	2.1	3.1	4.4	5.3	6.2	7.2	8.2	53	18	18
24	1.2	2.1	3.1	4.2	5.2	6.1	7.2	8.3	39	14	14
25	1.2	2.1	3.1	4.2	5.2	6.2	7.2	8.2	36	28	28
26	1.1	2.1	3.1	4.3	5.3	6.2	7.1	8.3	59	25	25
27	1.1	2.1	3.1	4.3	5.2	6.2	7.2	8.3	58	33	33
28	1.2	2.1	3.1	4.3	5.3	6.2	7.2	8.3	53	26	27
29	1.2	2.1	3.1	4.4	5.2	6.2	7.2	8.3	66	27	26
30	1.2	2.1	3.1	4.3	5.3	6.2	7.2	8.2	58	25	25

MASTER CODE SHEET EXPERIMENTAL GROUP

EXP	DEMOGRAPHIC VARIABLE PROFORMA								ARAS	GAGS		LOS
	AGE	EDU	TOF	FIM	AAM	DP	FHA	DOA		PRE	POST	
1	1.2	2.1	3.1	4.2	5.2	6.2	7.1	8.3	43	37	23	35
2	1.2	2.1	3.1	4.2	5.3	6.2	7.2	8.3	46	35	24	37
3	1.2	2.1	3.1	4.2	5.2	6.2	7.2	8.3	51	15	12	34
4	1.1	2.1	3.1	4.3	5.2	6.2	7.1	8.1	54	26	21	37
5	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.2	53	38	21	36
6	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.3	58	33	24	34
7	1.2	2.1	3.1	4.3	5.3	6.2	7.1	8.3	45	23	17	33
8	1.2	2.1	3.1	4.3	5.2	6.1	7.1	8.2	56	27	18	36
9	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.2	47	25	12	37
10	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.2	63	36	12	32
11	1.2	2.1	3.1	4.2	5.2	6.2	7.1	8.3	52	17	24	34
12	1.1	2.1	3.1	4.4	5.3	6.2	7.1	8.3	46	32	22	34
13	1.1	2.1	3.1	4.3	5.3	6.2	7.1	8.3	54	29	15	35
14	1.2	2.1	3.1	4.4	5.2	6.2	7.1	8.3	32	34	18	35
15	1.2	2.1	3.2	4.3	5.2	6.2	7.1	8.3	43	24	16	36
16	1.2	2.1	3.1	4.3	5.3	6.2	7.1	8.2	50	28	16	35
17	1.2	2.1	3.1	4.4	5.3	6.2	7.1	8.1	53	17	16	34
18	1.2	2.1	3.1	4.3	5.2	6.2	7.2	8.2	48	25	20	31
19	1.2	2.1	3.1	4.3	5.2	6.1	7.1	8.3	38	29	17	32
20	1.2	2.1	3.1	4.2	5.3	6.2	7.1	8.3	57	37	23	34
21	1.2	2.1	3.1	4.2	5.3	6.2	7.2	8.2	57	33	25	33
22	1.2	2.1	3.2	4.3	5.3	6.2	7.2	8.1	66	22	18	35
23	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.1	53	28	15	36
24	1.2	2.1	3.1	4.3	5.2	6.2	7.2	8.3	52	27	20	36
25	1.2	2.1	3.1	4.3	5.3	6.2	7.2	8.3	55	15	13	35
26	1.2	2.1	3.1	4.2	5.2	6.2	7.1	8.3	37	25	18	31
27	1.1	2.1	3.1	4.2	5.2	6.2	7.2	8.3	54	24	14	32
28	1.2	2.1	3.1	4.3	5.3	6.2	7.1	8.3	38	32	20	34
29	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.2	65	36	21	34
30	1.2	2.1	3.1	4.3	5.2	6.2	7.1	8.2	57	24	12	37

APPENDIX-XVII

PHOTOGRAPHS OF APPLICATION OF GRATED CUCUMBER